A Cognitive Approach to Foreign-inspired Chinese Terms

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Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

(Signature)

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ABSTRACT

This thesis has aimed to set out the classification and word production of foreign-inspired Chinese terms (FICT) within the language system of modern Chinese. FICT refers to a group of vocabulary items in Chinese as a recipient language, where formation is motivated by foreign entities or concepts and designated by some foreign words, but no established foreign elements are in fact transferred from the donor language. The thesis establishes a group of terms identified as a particular category of Chinese borrowings according to the motivation of word production, concerning human bodily perception and cognition experience of foreign entities or concepts. Chinese borrowing is categorized as four types: phonic loans, semantic loans, loan blends and FICT, based on the motivation of sound, form and meaning of foreign words, and sensory perception and cognition of foreign entities and concepts. Cognitive semantics, adopted as an approach in the thesis, is a study of mind and its relationship with embodied experience and culture. Employing language as a key methodological tool for uncovering conceptual organization and structure, this study explores the methods of FICT word production, such as sensory perceptual and metaphorical production in terms of principles of cognitive semantics within the Chinese language system. The various types of Chinese borrowings are analysed in terms of the theory of categorization, and FICT in particular are examined under the semantic model proposed here. It is hoped that the thesis is able to open a new approach to the investigation of Chinese loan words and the process of FICT word production within cognitive semantics.
Chapter One
Introduction

1.1 Introduction

This study addresses the production of foreign-inspired Chinese terms through a cognitive semantics approach. Foreign-inspired Chinese terms (FICT) are defined as those Chinese terms that are motivated by entities or concepts that originate from other than Chinese sources. ‘Chinese terms’ refers to words containing compound words, phrases or expressions in modern Chinese, from the 19\textsuperscript{th} century to the present. ‘Foreign-inspired’ means that full or partial elements of a Chinese term derive from exotic entities or concepts. This term follows the phrase ‘English-inspired vocabulary item’ proposed by Stanlaw (2004: 19-20), who noted that ‘new words are created within the Japanese language system by using English’ (p.20). The distinguishing factor is that foreign-inspired Chinese terms, FICT, are produced through concrete entities or concepts, enabling perception and cognition in Chinese native speakers. The cognitive semantics approach involves a study of mind and its relationship with embodied experience and culture. The approach implies the use of language as a key methodological tool for uncovering conceptual organization and structure.

This chapter provides an overview of foreign-inspired Chinese terms, FICT, as a
Section 1.2 presents issues of FICT and other Chinese borrowings, that is, the words that come into a language through the process of borrowing. It will be shown that all Chinese borrowings are motivated by the sound, form and meaning of original foreign words, and also foreign entities or concepts with examples. This brings up the use of the term ‘motivated.’ Motivation refers to non-arbitrary links between a form and meaning of linguistic expression. The sound of foreign words refers to a phonic level concerning pronunciation, transliteration of sounds and phonetic notation. The form and meaning of foreign words denote in turn the letters of alphabetic writing system, word meaning and word explanation. In terms of motivation for word production of Chinese borrowings, there are four classifications of borrowings: phonic loans, semantic loans, loan blends and FICT. Among these types, FICT—where much of the research in this study is directed—are a fuzzy and disputed category in Chinese borrowings. Section 1.3 attempts to provide a cognitive semantics approach to explain FICT linguistic phenomena, including other three types of Chinese borrowings. It is shown that FICT tend more to cognitive word production, according to sensory perception and cognition such as human senses of visual, hearing, taste, smell, and motor movement, as well as understanding of foreign entities or concepts. The process of word production for FICT is presented on the basis of sensory perceptual experience and cognition of foreign entities. Section 1.4 briefly shows data collection and methods of observation and secondary data, concerning everyday life, past research and relevant theory of Chinese borrowings. Section 1.5 describes significant aspects of this study, asserting a belief that the study
will fill a gap in the field of Chinese borrowings, with a prediction in terms of formulation of classification and word production for FICT with cognitive semantics approach. Significant aspects also include linguistic/sociolinguistic aspects, cultural exchanges and business points. Finally Section 1.6 presents the overall organization of the whole study.

1.2 Foreign-inspired Chinese Terms and Other Chinese Borrowings

Foreign-inspired Chinese terms (FICT) are motivated by foreign entities or concepts, not by foreign words within the modern Chinese language system, such as the sound, form and meaning of words. FICT are produced by a motivation, not by arbitrariness in the process of word production based on principles of sound, form and meaning of indigenous words. For example, the terms *changjinglu* 长颈鹿 (long, neck, deer [giraffe]), and *huoche* 火车 (fire, vehicle [train]) (from a glossary, CLSHK, 2002), are produced by properties and function of foreign entities. The property and function of ‘giraffe’ and ‘train’, considered as an animal and a product from foreign lands respectively, form a motivation of word production for FICT. This kind of motivation, generally speaking, derives from entities or concepts that appear foreign. In terms of etymology the examples are as an individual category included in the area of Chinese borrowings.

The term ‘Chinese borrowing’ is a broad concept. Borrowings called loan words here sometimes refer to words that come into a language through the process of
borrowing, a process by which a language absorbs words and expressions from other languages and adapts them to its own use (Lazarus et al, 1971). As in English, the Chinese borrowings contain various types of loan words such as phonic loans, semantic loans and loan blends, which are motivated by foreign elements or by foreign plus indigenous components.

Phonic loans are motivated by foreign sounds concerning transliteration, pronunciation, and phonetic notation. The transliteration of sound denotes that the Chinese sound reflects the alphabetic sound of foreign letters or words, i.e.  

\[
\text{xixi 西西 (cc)}; \\
\text{pronunciation means that the Chinese sound copies the pronunciation of foreign words, i.e. kafei 咖啡 (café), adapting the Portuguese language (Guoyu ribao, 1981: 241); phonetic notation represents a foreign phonological adaptation by Chinese sounds, i.e. pannixilin 盘尼西林 (penicillin). On the phonic level, the form of adaptation is determined by replacement of sounds or phonemes of the foreign language in the borrowing language. From the point of view of adaptation, phonic loans are motivated by foreign sounds. That is, the Chinese phonic loans are reproduced by sounds of foreign words. Chinese characters in sound borrowings usually only record foreign sounds, not represent their meaning in modern Chinese, just as showed in words above.}

Semantic loans are translated from meaning and structure of foreign words such as lanpishu 蓝皮书 (blue book) and zuqiu 足球 (football). Semantic loans refer to instances of borrowing where the choice of indigenous characters is determined by the meaning and structure of the foreign word. Semantic loans are used in cases where
there is no indigenous word to represent a foreign entity or concept. Semantic borrowings comprise semantic loans and loan translation in word structure. From the perspective of productive motivation, semantic loans are produced by the word meaning and structure of foreign original, and they correspond to the foreign language in the borrowing one.

Loan blends are mixed words which involve foreign sounds plus indigenous generic terms, i.e. *jipuche* 吉普车 (lucky, universal, vehicle [jeep]), or foreign sounds plus foreign meaning, i.e. *daolinzhi* 道林纸 (road, forest, paper [glazed printing paper/Dowling paper]), or foreign meaning plus indigenous generic terms, i.e. *nongchang* 农场 (farming/agriculture, place [farm]) and foreign letter plus foreign meaning, i.e. *aiksiguang* X 光 (X ray). These borrowings retain foreign components in the form (e.g. X), sound (e.g. jeep) and meaning (e.g. paper) which are composed of certain elements of motivation for word production.

Initialism and acronym occur in modern Chinese, such as ‘cc’, ‘WTO’, ‘CT’, ‘DVD’ or ‘DOS’, ‘AIDS’, but this is not a category of Chinese borrowings in this study because of its changeable and non-stable use in modern Chinese. When it is used the Chinese pronunciation differs from English. For example, the word *aiksiguang* X 光 (aiks, light [X-ray]), in which the letter ‘X’ is pronounced as /aiks/ instead of English sound /eks/ (Zhou Yimin, 2000: 16). All phonic parentheses in this study adopt the nativization alphabetic table for English proposed by Zhou Yimin (2006: 16). It is worth noting that words borrowed from Japanese (the end of the 19th century and the first part of the 20th century) are not included in the scope of this study.
There are two reasons for this: (1) many new terms referring to modern technology, and Western political and economic concepts were first coined in Japan and then adopted in China. The Japanese employed Chinese characters, reading them in their own system of pronunciation which had been borrowed from China a millennium before (Wang Li, 1958: 528). When these new terms were imported into Chinese, they were pronounced in modern Chinese. Thus Chinese native speakers do not feel them to be like foreignism; (2) there has been a dispute about ‘Japanese words’ in Chinese borrowings from the end of 1950s. According to Shi Youwei (2000), some compound terms already existed in early Chinese texts, and the Japanese appropriated them to translate new western concepts, or even borrowed the existing terms such as tianzhu 天主 (God), huaxue 化学 (chemistry), qianbi 铅笔 (pencil) in literature (Shi Youwei, 2000: 166-167). In this view, terms were created first by Chinese, and then went to Japan.

According to analyses of foreign-inspired Chinese terms, phonic loans, semantic loans and loan blends above, all borrowing types are motivated when they are produced or reproduced in modern Chinese. Here ‘reproduce’ means recreation of foreign words, while ‘produce’ refers to creation based on foreign entities or concepts in this study. Phonic loans, semantic loans, and loan blends are reproduced in turn by sounds, meanings and forms of foreign words, whereas foreign-inspired Chinese terms are produced by foreign entities or concepts within the Chinese language system.

Foreign-inspired Chinese terms are a fuzzy category of borrowings; in fact some
scholars do not consider them to be Chinese loan words, believing that there are no foreign elements in word formation or production within the Chinese language system. Usually they classify this kind of words under indigenous words (Wang Li, 1944, 1993; Zheng Dian, 1956; Sun Changxu, 1956; Gao Mingkai & Liu Zhengtan, 1958), or include them in description form and semantic loan as in *fanqie* 番茄 (tomato) and *qingmeisu* 青霉素 (penicillin) (Luo Changpei, 1950/1989; Zhou Dingyi, 1962; Shi Youwei, 1991, 2000; Masini, 1993; Yip Po-ching, 2000). These opinions and classifications are tenable from the perspective of principles of word production such as sound, form and meaning within modern Chinese. However, from the point of view of motivation for word production, foreign-inspired Chinese terms clearly derive from concrete entities or concepts imported into China from abroad. With the examples *fanqie* 番茄 (tomato) and *qingmeisu* 青霉素, these two examples come out of the concept ‘tomato’ and the entity ‘penicillin’ respectively, representing ‘foreign eggplant’ and ‘green mould element (fungus)’. Tomato is not exactly ‘egg plant’; it is a name for an exotic entity. Similarly, ‘green mould element’ also does not fully correspond to the original meaning. These two examples were inspired to be produced within the Chinese language system.

In short, foreign-inspired Chinese terms (FICT) involve argument over classification and motivation of word production. FICT are a fuzzy category, located at the centre of two individual and opposite poles of classification. This is a complex problem and it is worth exploring carefully in this study. Thus there is a question to consider: In what way does the foreign-inspired Chinese term produce in modern
Chinese? The cognitive semantics approach provides an answer.

1.3 The Cognitive Approach

This approach sees language as inseparable from cognition. Natural language is a result of human intelligent action and a component of human cognition. The cognition denotes ‘ability to make sensory experience accessible to the conceptual system by representing it as concepts, together with the information processing that operates over those concepts’ (Evans & Green, 2006: 240). The cognitive approach views cognition as preceding language and determining the development of language. Language is a consequence of the ability of cognition to develop to a certain stage. Then the entity that can be understood is expressed by language. Thanks to language, human thought in the internal world and information in the external world can be exchanged, while experience stimulates the development of species and individual cognition for communication, adjustment and adaptation.

In the field of linguistics there is a principle that language creation, learning, and usage should be explained by reference to concepts of human cognition. Knowing and naming a new thing is a matter of the cognitive process defining its category. Mastering a skill is the cognitive effect. Solving a problem embodies the cognitive capacity. Ungerer & Schmid see three main perspectives, the experiential view, the prominence view, and the attentional view of language. The experiential view employs empirical description of language rather than logical rules and theoretical
considerations. The prominence view is concerned with the selection and arrangement of the information that is expressed by language users and how a figure may be singled out and perceptually prominent against a background. The attentional view assumes that what a person actually expresses reflects the parts of an event that attract that person’s attention. The attentional view uses attention allocation to explain why one stage of an event is discussed while other stages may not be (Ungerer & Schmid, 1996: xi-xiii).

The embodiment of experience has consequences for cognition: the ‘reality’ of what is thought about and talked about, what can be perceived and conceived of, derive from embodied experience, and the human mind must bear the imprint of embodied experience (Evans & Green, 2006: 46). Embodiment is a central idea in cognitive semantics. The embodiment of experience implies that ‘we have a species-specific view of the world due to the unique nature of our physical bodies’ (Evans & Green, 2006: 45). The way reality is construed relates in large measure to visual experience, for example in terms of colour perception.

Cognitive semantics is the study of regularity of cognition in regard to the process of creation, acquisition, usage and understanding of language, as well as structural models of linguistic knowledge concerning mind and memory. The same event or the entity may be expressed by different sentences or words, and choosing the form of sentence or word depends on the prominence given to the entity.

The human experience can be broadly categorized as sensory experience and subjective experience. The sensory experience denotes experience derived from
sensory perception and concerns perceptual data derived from the external world. Concepts that derive from sensory experience include those relating to the domains of space, motion, temperature and so on. The other kind of experience is introspective or subjective experience. This includes emotion, consciousness and experiences of time such as awareness of duration, simultaneity and so on. Sensory experience is received via perceptual mechanisms. These mechanisms are rather sophisticated and provide structure that is not necessarily apparent in the raw perceptual input (Evans & Green, 2006: 65).

All types of Chinese borrowings are motivated cognitively by foreign sound, form and meaning in terms of principles of word production, as discussed above. The proverb ‘cognitively’ entails that the foreign components in phonic and semantic loans, or loan blends are one of the cognitive actions of the external world. That is, this cognition derives from the direct sensory perception such as hearing, sight and so on. When the native speakers hear the Chinese phonic loans or foreign sound components in loan blends, they perceive words through the sound which differs from indigenous such as *pannixilin* 盘尼西林 (penicillin) or *jipuche* 吉普车 (jeep). This is perception or embodied cognition at the level of sound. As to the semantic level, the meaning and structure of foreign words are a cognitive mode of understanding Chinese semantic loans and loan blends, where meaning is the conventional ideational or semantic content associated with the symbol, and the meaning associated with a linguistic symbol is linked to a concept. Concepts derive from perception, for example, the terms *lanpishu* 蓝皮书 (blue book) and *zuqiu* 足球 (foot ball).
Foreign-inspired Chinese terms or FICT are motivated cognitively by foreign entities or concepts according to principles of word production. In other words, FICT are produced by sensory perceptual experience (Johnson, 1987; Mandler, 2004) and metaphorical mappings (Lakoff & Johnson, 1980; Lakoff, 1993; Gibbs, 1994; Kövecses & Radden, 1998; Radden & Panther, 1999; Yu, 1998). Sensory perceptual experience denotes human senses of vision, hearing, touching, taste, smell and motor movement concerning color, shape, shape-color, shape-size, texture, temperature and so on. Metaphorical mappings relate to orientational, image and conceptual metaphors. A mapping ‘connects entities in one conceptual region with another’ (Evans & Green, 2006: 367).

This study mainly focuses on sensory perceptual production and metaphorical production of foreign entities or concepts. For instance, the term baidagua 白大褂 (white, big, gown [doctor’s coat]) is produced by senses of vision-color from perspective of sensory perceptual word production. This example does not correspond to foreign original word in structure and form, even in the way of expression of word meaning. Thus, the English expression ‘doctor’s coat’ is replaced by Chinese verbal color components. The replacement is not semantic translation from the concrete counterpart; it is a purely cognitive and functional transformation of colors. Similarly, the shape and size of foreign entities can also have cognitive FICT motivation. The term jinzita 金字塔 (gold, character-shaped, tower [pyramid]) is motivated by the shape of the entity ‘pyramid’. The external form of character jin 金 (gold) resembles the contour of a pyramid. This is a visual motivation for FICT. Other
sensory-perceptions such as through haptic, auditory, odorous, flavors and vestibular senses may also form a motivation of word production for FICT. Examples will be discussed in chapter 6.

Metaphorical mapping is a motivation producing FICT by orientational, image and conceptual metaphors. Orientational metaphors can be explained by image schemas, which derive from sensory and perceptual experience. Image schemas are very basic conceptual elements which contribute to the construal of more complex conceptual structures (Cruse, 2006: 84). Orientation comprising concepts of up-down, front-back, left-right, west-east, in-out, near-far, high-low relates to spatial categories. These orientational concepts are realized by image schemas of up-down, left-right, west-east, center-periphery, near-far (Evans & Green, 2006: 190). For example, the words *shangdi* 上帝 (high, emperor [God]), *fuyin* 辅音 (complement, sound [consonant]), *dongyangche* 东洋车 (east, foreign, vehicle [jinrikisha]), *zuolunshouqian* 左轮手枪 (left, wheel, hand, gun [revolver]), *waike* 外科 (external, section [surgery]).

Image metaphors are based on the physical resemblance, mapping one image onto another (Lakoff, 1993). For example, *yashemao* 鴨舌帽 (duck, tongue [peaked cap]), *yinyan* 银燕 (silver, swallow [airplane]), *mianbaoche* 面包车 (bread, vehicle [van]). These three examples represent respectively mappings onto shape, colour-shape, and shape-size of entities.

Conceptual metaphors link a source domain and target domain at the conceptual level (Evans & Green, 2006: 295). The domain is a body of knowledge that organizes
relevant concepts. Mapping links the source domain and target domain. For example, 

\textit{maoyan} 猫眼 (cat, eye [peephole]).

FICT are involved in categorization of Chinese borrowings, analysis being in terms of the prototype theory of cognitive semantics, which relates to the nature and structure of concepts (Cruse, 2006: 146-148). The theory is that people categorize ‘not by means of necessary and sufficient conditions, but to a prototype, a relatively abstract mental representation that assembles the key attributes that best represent instances of a given category’ (Evans & Green, 2006: 249). Categorization may help to identify a particular category of Chinese borrowings as FICT, and so the FICT may be viewed as peripheral borrowing in terms of common attributes such as foreign concepts (meaning), foreign etymology and foreign culture. Collected data will be categorised as three types in terms of motivations of word production: sensory-perceptual, spatial and functional. What categorization needs to do is distinguish FICT prominent word meaning of compound words and determine the motivation of word production. The sensory-perceptual category contains the motivation of foreign-inspired Chinese terms that are made of human senses: visual, hearing, touching, taste, smell and motor movement. The spatial category comprises physical, orientational and temporal entities, which are motivations of FICT word production. The functional category is also concerned with motivation of word production, where function is prominent in word meaning. Finally, the theory of categorization may analyze FICT category attributes: it is employed to explain the FICT semantic model, which is composed of ‘distinctive properties + generic name’.
A FICT compound word generally consists of a first element representing ‘distinctive properties’ and a second element expressing ‘generic name’ of entities or concepts.

The Western approach of cognitive semantics is able to explain Chinese linguistic phenomena, and to reveal the regularity of Chinese word production. The theory of cognitive semantics has been important in guiding the research in this study. New associations and new extrapolations from data need to be measured against findings in cognitive semantics.

1.4 Data and Methodology

The research idea and data in this study originated from everyday life, from past research and from relevant theory. The research idea meant recognizing the important questions and adopting inventive approaches to getting answers. Data collection refers to obtaining information necessary to answering the research questions. There are several questions that could be studied in the field of Chinese borrowings (Tian Huigang, 1993; Wu Shixiong, 1995; Shi Youwei, 2000); among them the identification and classification of Chinese borrowings are particularly important, because Chinese language scholars do not regard foreign-inspired Chinese terms as a particular category in Chinese borrowings. In previous research, it was found that foreign-inspired Chinese terms is a real issue in Chinese, and that FICT occur in everyday life, in research and loan word theory.

Lexical research is close to everyday human life. Every day Chinese people use
foreign vocabulary, at home and outside. Foreign-inspired Chinese terms are present everywhere; the question from many Chinese speakers may be how it happened that foreign entities where named in this or that particular way. This has been the stimulus for the writing of the present thesis.

Investigation of FICT involves past research and relevant theory on Chinese borrowings. Examples have been taken from articles or monographs on loan words. In addition, about 800 terms are taken from *An Etymological Glossary of Selected Modern Chinese Words* (CLSHK, 2002). Observation has been the best way to obtain primary data that has been collected, with Chinese linguistic phenomena observed from the point of view of a native speaker, and about 150 everyday FICT expressions were selected. Alongside observation, secondary data collection is basic—data originally collected or recorded at an earlier time, usually by a different person or researcher, for a different purpose from the research problem at hand (Johnson & Christensen, 2000: 152).

1.5 Significance of the Study

The study’s cognitive semantics approach will investigate FICT as a particular category of Chinese borrowings, and fill a gap in the field of Chinese loan words. Research on FICT can clarify the process of Chinese conceptualization of word production, and how Chinese native speakers produce new terms to name foreign entities and concepts. Investigation of Chinese borrowings will demonstrate cognitive
FICT motivations and confirm the non-arbitrariness of linguistic phenomena supported by cognitive semantics. The methods of FICT word production shown here can be a reference for other languages.

The study addresses the classification of Chinese borrowings through the theory of categorization (Rosch, 1975, 1977, 1978; Geeraerts, 1988). The identification of FICT has emerged for the first time in the field of Chinese language. This study uses the evident (the sound, form and meaning of Chinese terms) and potential (etymology, concept and culture of Chinese terms) attributes of Chinese borrowings for identification of FICT. In addition, verifying the principles of sensory perceptual experience (Johnson, 1987) and conceptual metaphor (Lakoff, 1987, 1993), the study demonstrates that the word production of FICT as a particular category and word reproduction of phonic loans, semantic loans and loan blends as other categories of Chinese borrowings are motivated, not arbitrary. Most FICT collected for this study can be explained in terms of sensory perceptual experience and conceptual metaphors. This investigation of FICT as a particular category of Chinese borrowings is a feasible new way to study borrowed Chinese vocabulary.

At the linguistic level, it is hoped to establish strategies for enriching the Chinese vocabulary through borrowing and for establishing a new system of classification of Chinese loanwords. Based on the analysis of various Chinese borrowings, this study can clarify the foreign and indigenous etymology of certain borrowings, and through checking the etymology of particular loan words, it can clarify Chinese conceptualization of word production: what Chinese speakers think when they coin a
new borrowed term, and how new entities or concepts are regarded. This study also employs a semantic model of word production to analyze nominal FICT that may improve on other Chinese models in modern Chinese.

At a sociolinguistic level, it is hoped that the study may provide a linguistic combination of methodology and theory to examine social development in both China and foreign countries, with borrowed words reflecting historical social progress at different stages of development. The investigation of loan words can also provide linguistic evidence of communication between China and foreign nations.

At the level of cultural exchanges, the study of borrowings can provide resources for teaching Chinese as a second/foreign language. Learners may be interested in borrowed terms, and Chinese language teachers can use examples in teaching. The study could improve foreign language teaching in China as students realise the number of loan words exist from English or another language in various cultural or scientific fields.

At the level of business, the study can help businessmen to understand the Chinese approach in translating brand names and trademarks, in advertising, and to enhance the process of translating and reproducing foreign words for foreign enterprises.

1. 6 Organization of the Study

This study aims to identify FICT as a category of Chinese borrowings and
analyze the cognitive motivations for the production of FICT. A review of the relevant literature and more detailed description of the research problem in Chinese borrowings are provided in Chapter 2. To summarise the research classification, a new system of Chinese borrowings is formulated as phonic loans, semantic loans, loan blends and FICT. This review is also concerned with terminology of Chinese borrowings, and publications of monographs and dictionaries. In Chapter 3, a cognitive semantics approach, assumptions of the study, data collection and data analysis are all presented as a theoretical basis and methodology for the study. Chapter 4 examines categorization of Chinese borrowings and identifies FICT as a particular category of Chinese borrowings. In Chapter 5, cognitive motivations for Chinese borrowings are analyzed and the semantic FICT model is formulated in terms of principle of modern Chinese word production. Some examples of FICT are explained in terms of the theory of categorization. Chapter 6 details FICT sensory perceptual production, motivated by human senses of visual, hearing, touching, taste, smell and motor movement. Chapter 7 provides a detailed analysis of metaphorical production for FICT, while Chapter 8 summarizes the main findings and discusses implications for future research. FICT examples collected for this study are listed in an appendix, and all published sources referred to are listed in the References.
2.1 Introduction

This chapter is a review of literature, produced by both Chinese and foreign scholars, on the phenomenon of Chinese borrowing. The words borrowed from the donor languages (in this case, from English and Russian), and utilised in a receiver language (modern Chinese) represent phonetic and semantic features of the complete ‘receiving’ lexicon. Other aspects of the receiving language include foreign-inspired Chinese terms. Borrowed or inspired terms are often regarded by some foreign scholars as a result of language contact (Haugen, 1950; Weinreich, 1953; Zuckermann, 2003). According to these scholars, intra-linguistic and extra-linguistic factors can be distinguished. These factors contribute to modern Chinese borrowings, or borrowed words in any language. Intra-linguistic factors refer to phonetics, vocabulary and syntax within language; extra-linguistic factors denote phenomena relating to cultures in the world. Loan words are to be regarded as a function of historical, social, political, economic, and cultural forces.

Sections 2.2 and 2.3 review and explain the definition, meaning and usage of
Chinese borrowings, as well as the historical evolution of terminology of Chinese borrowings, defining the term ‘foreign-inspired Chinese terms’ used in this study. Section 2.4 introduces the classification of loan words in modern Chinese, and proposes a new classification of modern Chinese. Section 2.5 then reviews different methods of reproduction for foreign words, the way of naming foreign entities and concepts, the issue of standardization of Chinese borrowings in relevant publications. The early research clues in past literature are reviewed in section 2.6. Finally, section 2.7 briefly introduces some existing dictionaries of loan words in the Chinese language.

2. 2 Terminology of Chinese Borrowings

During the 20th century, many Chinese scholars investigated loan words as they had occurred in the modern Chinese language. Zhou Dingyi (1962) and Shi Youwei (1991; 2000), for instance, defined the term *wailaici* 外来词 (loan word/borrowing) in detail. The terms *wailaici* 外来词 (loan word) and *wailaiyu* 外来语 (foreignism) despite their Chinese appearance are concepts whose semantic content is taken from English. The term *wailaici* 外来词 (loan word/borrowing) has been borrowed from the English phrase ‘foreign word’, and the term *wailaiyu* 外来语 (foreignism) has been imported from the English expression ‘foreignism’. Because both terms contain the element ‘foreign’, they are often misunderstood by Chinese speakers as connoting *waiguode* 外国的 (that one is from a foreign country). Apart from this meaning,
both terms also connote waizude 外族的 (that an individual is of another nationality). For these reasons, the borrowed semantic item wailaici 外来词 (foreign word) must be understood as either an item coming from a foreign country, or as an item from another cultural group existing within a country (e.g., Mongolian, Manchu, etc.).

However, the terms wailaici 外来词 (loan word/borrowing) or wailaiyu 外来语 (foreignism) in modern Chinese, generally speaking, may represent the meaning of the following English words or phrases: ‘loan word’, ‘alien word’, ‘foreign word’, ‘borrowing’, ‘loan’, ‘loan blend’, ‘loan translation’, ‘alienism’, ‘foreignism’, ‘peregrinism’, ‘hybrid word’, and ‘calques’ (Huang Heqing, 1995; Shi Youwei, 1996, 1997; Ye Jinglie, 1996). Besides this, the term jieci 借词 (loan word, borrowing) in modern Chinese is roughly analogous to the meaning of wailaici 外来词 (loan word/borrowing) or wailaiyu 外来语 (foreignism). The English terms ‘loan word’, and ‘borrowing’ as used in the present thesis indicate the meaning of the Chinese terms wailaici 外来词 (loan word/borrowing) and jieci 借词 (loan word, borrowing). The terms ‘loan word’ and ‘borrowing’ may occur in different contexts, and have been used alternately. In addition, other terms, such as ‘loan’, ‘loan translation’ also appear in the discussion.

In modern Chinese, as Shi Youwei (2000: 4) notes, whole or part of a loan word’s phonetic characteristics represent a foreign word. These loan words retain the original meaning of their source words, and are transliterated according to Chinese linguistic principles, that are sinicised. It may well be true that a loan word usually achieves enduring usage in the borrowing language.
It is clear that borrowing of non-indigenous terms by a language such as modern Chinese often substantially alters the phonetic and morphological properties of the borrowed word, in relation to its original properties. For example English terms may sound different and act differently in Chinese sentences. This is particularly noticeable when a term in the English language transcribed according to the alphabetic system, is ‘transplanted’ into a language that uses a picto-ideographic writing system, such as modern Chinese.

The key term ‘foreign-inspired Chinese terms’ (FICT) used in this study derives from ‘English-inspired-vocabulary items’ (Stanlaw, 2004: 19). This term refers to some symbol, or conceptual unit in a recipient language whose production is motivated by a foreign entity or word; but no established foreign lexeme is ‘ever really transferred from the donor language to the recipient language’ (Stanlaw, 2004: 20). The term ‘foreign-inspired Chinese terms’ is closely concerned with the purpose and implementation of this study. This term is a tool to uncover borrowings that may not look at all like borrowings. It guides the analysis of numbers of Chinese borrowed terms in this study.

2.3 Meaning of Chinese Terminology

As we have examined above, there are two types of terms in modern Chinese: wailaici 外来词 (loan word/borrowing)/wailaiyu 外来语 (foreignism) and jieci 借词 (loan word/borrowing). Below, we shall examine the different linguistic features
of these two types of terminology.

2. 3. 1 Intention and Extension

On the basis of intentional and extensional analyses, some Chinese scholars regard these two types of terms as ambiguous. However, *jieci* 借词 (loan word, borrowing) is a term frequently used when discussing the relationship between foreign languages (as well as those of minority nationalities within China) and Chinese dialects, suggesting a direct influence of foreign culture upon the Chinese language. Under the influence of Japanese language, the term *wailaiyu* 外来语 (foreignism) was coined to indicate phonetic borrowing from foreign languages, while the character pronunciation remained distinct (Kun-yomi 训读). This may be attributed to the unwillingness of Japan to permit the entry of any minority nationalities for many years. When the term *wailaiyu* 外来语 (foreignism) was introduced into China in the 1940’s, its meaning was no longer limited to foreign languages (typically European) existing outside China, but was extended to also include words from minority nations (typically Eastern) existing within China. Consequently, the term *wailaiyu* 外来语 (foreignism) no longer referred solely to phonetic borrowing, but also to words which combined non-indigenous elements (i.e. hybrids).

As the nature of word borrowing continued to change into the late 1950’s, the term *wailaiyu* 外来语 (foreignism) was gradually replaced by the term *wailaiici* 外
外来词 (foreign word), which referred to the Japanese characters fully adapted into the modern Chinese language. The term jieci 借词 (loan word; borrowing) refers to words that maintain the English definition, and especially refers to phonetic borrowing appearing in Chinese academic works, for instance, in the Great Chinese Encyclopaedia, but is regarded as a synonym of wailaiyi 外来词 (foreign word)/wailaiyu 外来语 (foreignism) in many other books.

2.3.2 The User and the Place of Usage

Although Chinese scholars who have studied in Western countries prefer to use the term jieci 借词 (loan word; borrowing), those who have studied in Japan, such as Chen Wangdao, tend to prefer the term wailaiyu 外来语 (foreignism), which is popular among Chinese intellectuals. In China in the 1950's, the term wailaiyi 外来词 (foreign word) was replaced by the term wailaiyu 外来语 (foreignism). Among Chinese writers of various dictionaries there exists diversity in academic background and experience, and therefore differences in the application of terms and language. For example, in the volume of the Language (Great Chinese Encyclopaedia, 1988), writers headed by the Language Institute for Chinese Academy of Social Sciences only use the term jieci 借词 (loan word; borrowing), but not wailaiyu 外来语 (foreignism)/wailaiyi 外来词 (foreign word). However, in the encyclopaedia Cihai 辞海 (A Sea of Words, Luo Zhufeng, 1989), the term wailaiyi 外来词 (foreign word) appears as a lemma while wailaiyu 外来语 (foreignism) and jieci 借词 (loan word;
borrowing) are treated as references. Another textbook of modern Chinese introduces *wailaici* 外来词 (foreign word) as the main term in order to avoid confusion between the homophonous *jieci* 借词 (loan word; borrowing) and *jieci* 介词 (preposition) in modern Chinese.

2. 3. 3 The Historical Evolution of Terminology

There are several terms representing the meaning of loan words in Chinese linguistic history. As Pan Yunzhong (1989), Wang Li (1993), and Shi Youwei (2000) note, the term *yiyu* 译语 (translated word), was first used during the Tang Dynasty (618—907 A.D.). The term is defined as: ‘words which are translated from foreign languages’ (Shi Youwei, 2000: 8). From the time of the establishment of the Institute of Interpreters and Translators during the Yuan Dynasty (1271—1368 A.D.), until the beginning of the 20th century, various other institutes, such as *Huitong guan* 会同馆 (the Interpreters’ Institute) and *Siyi guan* 四夷馆 (the Translators’ Institute), had compiled numerous translated words (Masini, 1993: 19). For example, these included translated words of the Mongolian language, translated words from the language of the Ryukyu Islands, and translated words of Western languages. These translated words contained free translations, phrase and discourse, and sometimes included semantic or phonetic borrowing. Until the beginning of 20th century the content of translated words did not change.

Compared with translated words, the word *yiming* 译名 (translation term) is
used more widely in the Chinese language, and has a wider range of meanings. The term *yiming* (translation term) also refers to both semantic and phonetic borrowing (Hu Yilu, 1914). With the appearance of the concept of the word in modern Chinese language during the middle of the 1950s, the term *yici* (translated word) came into being as a non-academic term.

The word *wailaiyu* (foreignism) was first used as a formal academic term at the beginning of the 20th century. It was borrowed from the Japanese language, and cited by Zhang Taiyan as early as 1902 (Luo Zhufeng, 1993). Until the middle of the 1950s, the term *wailaiyu* was defined as terms containing full phonetic borrowing (for example, *modeng* — modern, and *motuo* — motor), or partial phonetic borrowing (for example, *bingqilin* — ice cream), as well as characters of Japanese pronunciation (for example, *te-tsuzuki*) (Chen Wangdao, 1934).

In 1936, Hu Xingzhi’s *Dictionary of wailaiyu* further included semantic borrowing. However, in his book of Chinese grammar, Lu Shuxiang (1942) stated that the term *wailaiyu* contained full or partial phonetic borrowing, and that semantic borrowing could only be found in compound words. Consequently, he eliminated the semantic component from *wailaiyu*.

In the mid-1950s, Gao Mingkai and Liu Zhentan (1958) believed that the term *wailaiyu* did not fit lexicological terms ending with the form *-ci* (foreign words). As a result, they corrected this discrepancy by formally adopting the term *wailaiji* (foreign words). The term *wailaiji* refers to instances
of phonetic borrowing, as well as to characters of Japanese origin. Such words are popular loan words at the present time, broadly accepted because of their rationale, and the ease with which they are adopted by native Chinese speakers. As a consequence, the use and range of wailaiyi 外来语 means it has gradually extended to become one of the main terms of loan words in modern Chinese. However, as the term wailaiyi 外来语 (foreignism) appeared earlier than the term wailaiyi 外来词 (foreign words), and was linked with Japanese, it is still a major loan word term within certain academic fields.

Other variations of word borrowing include jieruyu 借入语 (loan word, borrowing), jieyongyu 借用语 (loan word, borrowing), jiezi 借字 (loan word, borrowing), jieci 借词 (loan word, borrowing), jieyu 借语 (word borrowing), which are in fact Chinese counterparts to English loan words. Among them, the word jieruyu 借入语 (loan word, borrowing) first appeared in The English–Chinese Dictionary of Standard Chinese Spoken Language (Hemeling) in 1905. The term jieyongyu 借用语 (loan word; borrowing), indicating words containing borrowed sound, borrowed foreign shape, and Japanese characters, comes from the Japanese language (Hu Yilu, 1914). In 1950, Luo Changpai adopted the term jiezi 借字 (loan word, borrowing) for the first time. This term refers to words with phonetic borrowing, borrowed translation words, and descriptive words. Following the appearance of ci 词 (the word) in the middle of the 1950s, the term jieci 借词 (loan word; borrowing), a semantic translation from English, was adopted in Modern Chinese. Although this term appears synonymous with the word wailaiyi 外来词, as
in *Cihai* 辞海 (A Sea of Words, Luo Zhufeng, 1989), and in many textbooks of modern Chinese, not all Chinese scholars accept the similarity in meaning, as some hold that this term refers only to phonetic borrowing (Wang Li, 1958; Zhou Zumo, 1988). Other scholars such as Gao Mingkai and Liu Zhengtan (1958), hold that although *jieci* 借词 (loan word, borrowing) is a word from a foreign language, it is not a member of the native vocabulary, unlike the term *wailaici* 外来词 (foreign word) which does belong to the Chinese vocabulary. According to Yuan Ren Chao (1970), the term *jielu* 借语 (word borrowing) typically includes not only the phoneme, morpheme, and the word, but also the phrase and foreign utterances, or grammatical constructions. However many Chinese linguistics scholars do not hold the same opinion as Chao Yuanren (1970), and suggest that the term *jielu* 借语 (word borrowing) has aroused too much confusion. A result they have preferred to adopt the term *yinyici* 音译词 (phonetic translation word), which has a clearer but narrower meaning in modern Chinese. Other types of Chinese borrowings will be reviewed in the process of classification of borrowings.

2. 4 Classification of Chinese Borrowings

In the Chinese linguistic history, since 20th century the issue of classification of borrowings is a major problem in vocabulary study. There are many articles and monographs on the issue of classification of Chinese borrowings, but most of them follow the same benchmarks proposed in previous research. Here different and quite
representative opinions on classification are considered in a review in three parts: native and non-native scholar classification, and new classification.

2. 4.1 Native Scholars’ Classification

Chinese scholars have typically paid a great deal of attention to the various classifications of Chinese borrowings. Hu Yilu 胡以鲁 (1914) held that there were two types of loanwords in Chinese, and that loanwords could be categorized in terms of phonetic translation and semantic translation. He proposed twenty ways of semantic translation for foreign words in order to resist a process of phonetic translation. In fact Hu’s ‘resistance’ was only against phonetic translation in name. Terms produced by ‘phonetic translation’ he called ‘loanwords’ (Hu Yilu, 1923: 125) and he considered loanwords as words produced by transliteration or phonetic adaptation from foreign languages. Another linguist Sun Changxu 孙常叙 (1956) held the same view. From the viewpoint of linguistic theory of loanwords, Hu and Sun’s statements make a good point: phonetic translation seems to be phonetic adaptation, but the name of phonetic translation is simple, short, and clear. It also corresponds to the term ‘semantic translation’ in Chinese. ‘Phonetic translation’ is conventional usage in Chinese and has been used in the linguistic community for nearly a hundred years, although it also has inappropriate features.

Wang Li (1944) thought that there were three categories of Chinese loanwords: pure transliteration, for example, modeng 摩登 (modern), fanyaling 梵哑铃
(violin), \textit{kafei 咖啡} (coffee); transliteration with characters having meanings, for instance, \textit{tankeche 坦克车} (tank), \textit{bingqilin 冰淇淋} (ice-cream); semantic transliteration (transliteration with meanings of characters), for example, \textit{luoji 逻辑} (logic), \textit{youmo 幽默} (humour). The first type is right, but second and third types are confused in terms of principle of word formation or word production from the point of view of word meaning of these borrowings. These four words \textit{tankeche 坦克车}, \textit{bingqilin 冰淇淋}, \textit{luoji 逻辑} and \textit{youmo 幽默} are examples where sounds and meanings adapt the original counterparts to reproduce the foreign words. In other cases Chinese sound and meaning coincide with original sounds and meanings in one word. Thus these features, sound and meaning, can incorporate one group of borrowings in Chinese.

Luo Changpei (1950) classified \textit{jieci 借词} (loan word, borrowing) into four categories:

1. Phonetic substitution, which can be further divided into four subcategories, including:

2. pure phonetic translation, e.g. \textit{kafei 咖啡} (coffee), \textit{xuejia 雪茄} (cigar);

3. phonetic translation plus semantic connotation, e.g. \textit{kekoukele 可口可乐} (Coca Cola), \textit{aisibunandu 爱斯不难读} (Esperanto);

4. phonetic translation plus semantic annotation, e.g. \textit{kapian 卡片} (card), \textit{kache 卡车} (car);

5. those words whose semantic translation is mistaken as phonetic \textit{aimeide 爱美的}
6. New phonetic-compounds, in which the phonetic element is coupled with a semantic annotation, such that each pronunciation has its own meaning, e.g. an ‘氨’ (ammonia), gai 钙 (calcium), lü 铝 (aluminium);

7. Loan translations, i.e. words or phrases invented in Chinese on the basis of the morphological or syntactic structure of a foreign model, e.g. chaoren 超人 (Ubermensch [superman]), ziwo shixian 自我实现 (self-realization);

8. Descriptive forms, in which natural products or artefacts from exotic lands are often referred to by terms prefixed by words indicating foreignness, e.g. fanqie 番茄 (tomato), hugua 胡瓜 (cucumber), yanghuo 洋火 (match), ximi 西米 (sago), helanshui 荷兰水 (soda water) etc.

Luo’s classification is a first classification of Chinese borrowings in linguistics literature, and it opens the curtain of research on classification of loanwords in Chinese. However, Zheng Dian 郑奠 (1956) has argued that point (4) of Luo’s classification is a way of assimilation of foreign words, not a form of borrowing, and suggested that instead, another category should be used to include translated words imported from Japanese. Zheng thought that there were some different ways to assimilate the foreign vocabulary in Chinese (1956: 76). More important ways were:

1. Phonetic translation, for example, luoji 逻辑 (logic), dun 吨 (ton) etc.;

2. Semantic translation, for example, mali 马力 (horse power), miyue 蜜月
(honeynoon) etc.

3. Phonetic transliteration plus semantic translation, *pijiu* 啤酒 (beer), *buershiweizhuyi* 布尔什维主义 (большевизм [bolshevism]), *wutuobang* 乌托邦 (Utopia);

4. Borrowings from Japanese, i.e. structural borrowings, *shouxu* 手续 (procedure/formalities), *changhe* 场合 (occasion/situation) etc.

This classification has been shared by other scholars including Sun Changxu 孙常叙 (1956), Lin Tao 林淼 (1955), Zhang Yongnian 张永年 (1982), Zhou Zumo 周祖谟 (1988), Cen Qixiang 岑麒祥 (1983), as well as Gao Mingkai 高铭凯 and Liu Zhentan 刘正珽 (1958). However, their opinion of borrowings differs slightly from Luo Changpei’s classification. At the same time, Sun Changxu 孙常叙 (1956) proposed a new classification of loanwords, and categorized it as ‘borrowings’ and ‘translated words’. Sun’s borrowings consisted of two types: phonetic forms borrowed from foreign languages other than Japanese, for example *puke* 扑克 (poker), *baleiwu* 芭蕾舞 (ballet), *yingqing* 引擎 (engine) and characters which were adopted from Japanese and used modern Chinese sounds substituted for Japanese syllables, for example *yindu* 引渡 (extradite), *qudi* 取缔 (outlaw). His translated words contained three groups: full translation words, for example, *bianzhengfa* 辩证法 (dialectic); partial translation words, *keluoban* 珂罗版 (collotype), *bingqili* 冰淇淋 (ice cream) and translation words with notes, *mingxing* 明星 (star), *shuqingshi* 抒情诗 (lyric). Sun Changxu (1956) held that full translation words and translation
words with notes were not loanwords in terms of the nature of word production. This is first time to note that full translation words and translation words with notes should be excluded from loanwords; and the scope of loanwords is defined in linguistic literature.

Gao Mingkai and Liu Zhengtan (1958) suggested that semantic translation words do not belong to the category of loanwords. They noted that all words are composed of sounds and meanings. Foreign words contain the phonetic level and semantic level, which are indispensable components for an original word. Foreign sounds and meanings which are together imported into Chinese form loanwords, because ‘combination of sounds and meanings’ is borrowed completely from foreign languages. Semantic translation words adopt only foreign meanings or concepts, not foreign sounds. They called this kind of semantic borrowings foreign meanings of words. Following their opinion, in 1958 the linguist Wang Li (1993) further stated that ‘only word borrowing, not translated words, should be classified as foreignisms’ (p.125). Wang assumed that loan translation, such as tielu 铁路 (railway), zuqiu 足球 (football), wuxiandian 无线电 (wireless), should be included in Chinese loanwords. Consequently, he did not classify translated words (or Japanese borrowing of Chinese characters) as loanwords in a strict sense; as such words had not been directly borrowed from European languages, but indirectly through Japanese. In further support of this argument, foreign views and opinions of Chinese loanwords have been very similar to those of Wang Li (1993).

Yip Po-ching (2000) has summarized the diverse categories of borrowings in
detail, and classified ‘strategies’ of borrowings as pure phonetic translation, phonetic translation plus semantic connotation, phonetic translation plus semantic annotation, semi-phonetic and semi-semantic translation, literal translation, semantic translation, explanatory translation, figurative translation, graphitic translation and innovative graphitic translation (p.333-342) as follows:

1. Pure phonetic translation, for example, *buding* 布丁 (pudding), *kuake* 夸克 (quark), *qiaokeli* 巧克力 (chocolate);

2. Phonetic translation plus semantic connotation, for example, *bengdai* 绷带 (bandage), *pengke* 朋克 (punk), *moter* 模特 (model);

3. Phonetic translation plus semantic annotation:
   a) phonetic translation with a category annotation at the end, for example, *pijiu* 啤酒 (beer), *jipuche* 吉普车 (jeep), *kapian* 卡片 (card);
   b) phonetic translation with a category annotation at the beginning, for example, *chetai* 车胎 (tyre), *jiuba* 酒吧 (bar), *danta* 蛋挞 ([egg] custard);
   c) phonetic translation with both semantic connotation and category annotation, for example, *jueshi yinyue* 爵士音乐 (jazz [duke + music]), *baolingqiu* 保龄球 (bowling [reducing ageing + ball]), *piliwu* 霹雳舞 (break [thunderclap + dance]);
   d) phonetic translation to be used in conjunction with a related term, for example, *xiu* 秀 (show) as in *tuokouxiu* 脱口秀 (talk show), *bo* 泊 (park) as in *boche* 泊车 (park one’s car);
4. Semi-phonetic and semi-semantic translation:
   a) first element phonetic and second element semantic, for example, *hulaquan* 呼拉圈 (hula-hoop), *shanmu dashu* 山姆大叔 (Uncle Sam);
   b) first element semantic and second element phonetic, for example, *xinyongka* 信用卡 (credit card), *bingjilin* 冰激凌 (ice-cream);
   c) first element phonetic with semantic connotation and second element purely semantic, for example, *miniqun* 迷你裙 (miniskirt), *nihongdeng* 霓虹灯 (neon lights);

5. Literal translation:
   a) pure literal translation, for example, *miyue* 蜜月 (honeymoon), *jinpai* 金牌 (gold medal), *ruanyinliao* 软饮料 (soft drinks);
   b) literal translation with category annotation, for example, *yaogunyue* 摇滚乐 (rock and roll), *jiweijiu* 鸡尾酒 (cocktail);
   c) pseudo-literal translation, for example, *dianshi* 电视 (television);

6. Semantic translation, for example, *minzhu* 民主 (democracy), *kexue* 科学 (science), *tizuiyang* 替罪羊 (scapegoat);

7. Explanatory translation, for example, *xingqishi zhuyi* 性歧视主义 (sexism), *koufu biyunwan* 口服避孕丸 (the pill);

8. Figurative translation, for example, *wanhuatong* 万花筒 (kaleidoscope), *caopoqwu* 草裙舞 (hula-hula);

9. Graphitic translation, for example, *jizita* 金字塔 (pyramid), *zhizixing* 之字形 (zigzag), *shizijia* 十字架 (cross);
10. Innovative graphitic translation:

a) identical meaning element in both forms, for example, *manao* 玛瑙 (agate), 
*níngmēng* 柠檬 (lemon), *gāli* 咖喱 (curry);

b) differentiating meaning element in a set, for example, *ta* 他 (he), *ta* 她 (she), *ta* 它 (it).

These examples reflect completely the situation of Chinese borrowings, but they may not all be ‘translation’ from foreign languages. When native speakers borrow or reproduce foreign words, they might use a different way to produce a new word in order to fit the regularity of word production in modern Chinese, such as sound, form and meaning. For example, the term *zhìxìng* 之字形 (zigzag) in the group (9) above, obviously, is made from its original shape, which looks like the Chinese character *zhī* ‘之’ representing a concrete shape of an entity ‘zigzag’. It is also necessary to note that the ‘strategies’ of the literal translation and semantic translation should unite a semantic translation according to the original word meaning, because ‘semantic’ contains literal meaning and explanation (definition) meaning of a word.

Other Yip Po-ching’s (2000) linguistic strategies utilised to facilitate the borrowing process include: Abbreviation of measure words into monosyllabic form, e.g. *mitu* 米突 (meter) becomes *mi* 米; *dachèn* 打臣 (dozen) becomes *da* 打; back-loan, e.g. *taifēng* 台风 (typhoon) from English, which is equivalent to the original Chinese *dāfēng* 大风 (strong wind); compounding, i.e. once a transliteration has been accepted into a language, it proliferates in accordance with the same word-formation
rules as other elements of the indigenous lexicon, e.g. *dadi* 打的, shortening *dishi* 的士 (Cantonese phonic loan from ‘taxi’), meaning ‘go by taxi’; *mingmo* 名模 (famous model), deriving from *moter* 模特儿 (model); direct full transplantation, e.g. *BBC* — as BBC; *CD* — as CD, and partial transplantation/transliteration; duplicate translation, in which a term may be translated differently for different contexts or connotations, e.g. *xiandai* 现代 (modern) and *modeng* 摩登 (modern) (Yip Po-ching, 2000: 343-346). This classification differs from previous research on Chinese borrowings, and linguistic terms of classification are newly formulated in the field of loan words in modern Chinese. Moreover, it differentiates the categories of abbreviation, back-loan, compounding and direct full transplantation. However, it is a problem that the category of direct full transplantation is a challenge in communication between native speakers, because it is popular only among the people who can understand the foreign language.

2. 4. 2 Non-native Scholar Classification

In linguistic history, a few foreign scholars have touched upon the classification of Chinese borrowings. It is remarkable that the Chinese borrowings and neologisms were outlined from Czech by Zdenka Hermanova-Novotna (1967, 1969). She discussed categories of hybrid words in modern Chinese and categorized it as three types:
1. Explicative hybrid creations or explicative hybrids: these hybrid creations are denoted by some linguists as foreignisms attached to their native equivalents. For example, *tangewu* 探戈舞 (tango), *shadingyi* 沙丁鱼 (sardine).

2. Loan-blended hybrid creations, or loan-blends, which are innovations introduced into the lexical system of the borrowing language by joint application of the mechanisms of phonemic borrowing and loan translating. For example, *tankebing* 坦克兵 (tackiest), *tuolaji* 拖拉机 *(tractor)*.

3. Independent hybrid creations or independent hybrids, which are words formed of borrowed and native constituents according to the word formation patterns of the borrowing language, not being a direct replica of a foreign model. For example, *kafeijing* 咖啡精 (coffee-extract), *pijiuhua* 啤酒花 (hop). These three ways to create loan hybrids are also detailed classification in terms of formation of Chinese borrowings although it is restricted in a category ‘loan hybrids’.

Italian Federico Masini (1993) has classified Chinese loanwords into a number of categories, including: phonemic loans, hybrids, semantic loans, loan-translations, graphic loans and new formations. Masini’s classification derived from review of works of Chinese scholars. He reviewed *Dictionary of loan words in Chinese* (1936) edited by Hu Xingzhi 胡行之. Masini introduced that in this dictionary Chinese loanwords were divided into five groups: a) phonemic loans (*quanyiyn* 全译音); b) semantic loans (*quanyiyi* 全译义); c) Japanese words (*quanshuru* 全输入); d) hybrids (*banyinbanyi* 半音半义); e) phonemic and semantic loans (*yinyijiangu* 音译
Masini made comments on classification of Luo Changpei (1950), Gao Mingkai and Liu Zhengtan (1958), as well as the monograph *Transformation and development of the Chinese written language from May Fourth Movement* (Beijing Shifan Xueyuan, 1959). Masini analysed borrowing phenomena in modern Chinese, and placed the Chinese vocabulary collected by him in the categories:

1. Phonemic loans, when ‘the language takes on the meaning (usually one of the meanings) and the phonemic shape of a foreign word and adapts it to its own phonemic system’ (Masini, 1993: 128).
2. Hybrids, indicating the association of a phonemic loan with an indigenous element.
3. Semantic loans, denoting ‘the terms which existed in the traditional lexicon, but assumed a new meaning on the basis of a foreign model’ (Masini, 1993: 129).
4. Loan-translation, meaning a word or a phrase invented in modern Chinese on the basis of the morphological or syntactic structure of the foreign model.
5. Graphic loans, referring to the language adopts both the meaning and the written form of the foreign term.
6. Autochthonous neologisms, denoting new formations possibly stimulated by a foreign word but not based on any foreign model.

These categories of borrowings basically followed previous studies and were coincided with the situation of loanwords in modern Chinese; particularly the last
category can inspire our research idea of Chinese borrowings.

Russian lexicologist Semenas (1997) has also divided Chinese loanwords into five categories, including: phonetic loans, phonetic borrowing plus Chinese connotation, semantic plus phonetic borrowings, loan-translations, phonetic borrowing plus generic terms. This classification followed traditional opinions on Chinese loanwords proposed by Luo Changpei (1950), Wang Li (1944, 1993), Sun Chngxu (1956), Gao Mingkai and Liu Zhengtan (1958) etc. Obviously, semantic loans are excluded from the category of loanwords.

The following table is a summary of the various classifications of Chinese borrowings outlined above, according to Chinese and foreign scholars (V = yes, X = no, O = not indicated).

Table 2.1 A Summary of the Various Classifications of Chinese Borrowings

<table>
<thead>
<tr>
<th></th>
<th>Yip</th>
<th>Luo</th>
<th>Zheng</th>
<th>Gao</th>
<th>Wang</th>
<th>Masini</th>
<th>Semenas</th>
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<tbody>
<tr>
<td>Phonetic Translation</td>
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<tr>
<td>Phonetic translation plus semantic connotation</td>
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<td>V</td>
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<tr>
<td>New phonetic-compound</td>
<td>V</td>
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<tr>
<td>Phonetic translation plus semantic annotation</td>
<td>V</td>
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<td>V</td>
<td>V</td>
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<tr>
<td>Semi-phonetic and semi-semantic translation</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
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<td>V</td>
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<tr>
<td>Loan-translation (calques)</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>X</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Semantic translation</td>
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<td>V</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Descriptive form</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Chinese characters with Japanese pronunciation</td>
<td>O</td>
<td>O</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>V</td>
<td>O</td>
</tr>
</tbody>
</table>

2. 4. 3 New Classifications

New classifications of Chinese borrowings appear in Chinese scholarship after that time when Masini’s work (1993) as a monograph was published in Journal of Chinese Linguistics in USA. From that time, a lot of native scholars have started to differentiate the Chinese borrowings with new perspectives in their studies. The discussion which sparked off the debate on the definition of *wailai gainianci* 外来概念词 ‘foreign concept words’ was published in the journal of the Chinese Language Society of Hong Kong. Among them, the classifications of Tian Huigang 田惠刚 (1993, 1996) and Wu Shixiong 吴世雄 (1995) are more representative. Tian Huigang (1993) defines six types of Chinese loanwords, such as *wailai yinyici* 外来
音译词 ‘foreign phonetic translation loan’, *wailai yiyici* 外来意译词 ‘foreign semantic translation loan’, *wailai yinyici* 外来音意词 ‘foreign phonetic + semantic loan’, *wailai hunheci* 外来混合词 ‘foreign hybrid word’, *wailai gainianci* 外来概念词 ‘foreign concept word’, and *wailai cixingci* 外来词形词 ‘foreign form word’ (e.g. WTO, ok). However, reviewing these six types, Wu Shixun (1995) described seven categories of Chinese loanwords based on three principles—sound, form and meaning of characters. Wu thought only one element of sound, form and meaning in a Chinese word is origin from foreign languages, that word can be viewed as a ‘loan word’. He claimed that this is a theoretical inference of Chinese borrowings but no examples for his assumed seven categories: 1) *xingjie* 形借 ‘form loan’, 2) *yinjie* 音借 ‘sound loan’, 3) *yijie* 义借 ‘meaning loan’, 4) *xingjie jian yinjie* 形借兼音借 ‘form + sound loan’, 5) *oxingjie jian yijie* 形借兼义借 ‘form + meaning loan’, 6) *yinjie jian yijie* 音借兼义借 ‘sound + meaning loan’, 7) *xingjie jian yinjie jian yijie* 形借兼音借兼义借 ‘form + sound + meaning loan’ (Wu Shixiong, 1995: 28).

Obviously, either six types or seven categories for Chinese borrowings appear as a formulation in classification, which remained still as an assumption. Consequently, responding to these two kinds of classifications, Huang Heqing 黄河清 (1995) presented his classification of Chinese borrowings with examples. He assumed that all borrowings are made from foreign influence, such as (1) foreign sounds, e.g. *faxisi* 法西斯 (fascism), and *bijini* 比基尼 (bikini); (2) foreign structure of words, e.g. *qingyinyue* 轻音乐 (light music), and *daigou* 代沟 (generation gap); (3) foreign sounds and meanings, e.g. *yuehanniu* 约翰牛 (John Bull), and *qianwa* 千瓦
(kilowatt); (4) foreign form of words or letter, e.g. liaoli 料理 (arrangement) from Japanese form of the word, aikesiguan X 光 (X-ray); (5) foreign influence of entities, e.g. jiaotache 脚踏车 (bicycle), huoche 火车 (train), huaxue 化学 (chemistry).

Thus, he called these five kinds of loanwords ‘foreign influence words’. However, Huang thought ‘the phonetic borrowings do not have naming motivation, and they represent only sounds’ (Huang Heqing, 1995: 18). Actually, phonic loans derive from foreign sounds which motivate phonetic word production (Ren Xueliang, 1981). Besides this, foreign sounds representing the meaning are motivation for Chinese phonetic borrowing in terms of principles of word production such as sound, form and meaning in modern Chinese.

According to Huang’s classification, the terms mianbaoche 面包车 (van), huaqi 花旗 (the US flag), qiche 汽车 (automobile/car), zhishengji 直升机 (helicopter), and shouyiji 收音机 (wireless/radio) are named by foreign influence of entities. Huang suggested that these words are named by different properties and shapes of entities. Other type of borrowings is produced by foreign influence of entities together with new meanings of indigenous characters, such as chidao 赤道 (equator), daxue 大学 (university), zhongxue 中学 (middle school), yixue 医学 (medicine), and xingqi 星期 (week). Huang’s classification (5) (1995) coincides with the situation of Chinese borrowings and shows the relation with motivation of word production, but does not indicate clearly the motivation of borrowings, citing only ‘influence’. However, it is necessary to note that the essential or natural motivation of the words has not been indicated in his classification, namely, the motivation relates
to the foreign sound, form and meaning of words as an essential or the shape, colour, contour, temperature and so on as a natural. For this reason, his classification is confused in terms of cognitive semantics approach, such as sensory perceptual and cognitive view, i.e. perceptual and conceptual (metaphorical) motivation of word production in the human mind. In spite of this, his work inspired the present research idea to identify a new category of Chinese borrowings.

Based on the previous research on classification of Chinese borrowings, this study formulates a new category, which involves the linguistic phenomena from foreign languages, particularly from English and Russian. As we explained in the introductory chapter, graphic loans which refer to words from Japanese and initialism (e.g. BBC) or acronym (e.g. AIDS) still remain in dispute among the Chinese linguistic scholars. The reasons are that words derived from Japanese have been proved gradually to be borrowed items from Chinese, and the initialism or acronym is not stable in Chinese in terms of duration in use. Therefore, our classification is restricted to four categories: phonic loans, semantic loans, loan blends, and foreign-inspired Chinese terms. The first three categories—phonic loans, semantic loans and loan blends—have been established as reviewed above. The last one, foreign-inspired Chinese terms, is a new category based on previous research on classification of Chinese borrowings.

The term ‘phonic’ differs from the linguistic literature terms ‘phonetic’ and ‘phonemic’. ‘Phonetic’ originates from phonetics, the study of the characteristics of human sound-making, especially those sounds used in speech (Finch, 2000: 229).
‘Phonemic’ comes from the phoneme, the minimal unit in the sound system of language according to traditional phonological theories (Finch, 2000: 228). The term ‘phonic’ is defined as a complex combination of phonological phonemes and speech sounds. In other words, ‘phonic’ contains the combination of two concepts ‘phonetic’ and ‘phonemic’ according to Finch (2000) and Görlach (1994), and represents the sound borrowed items from foreign languages in the study.

Phonetic loans are composed of transliteration, pronunciation and phonetic notation from the foreign sound level, for example, sound transliteration: moter 模特儿 (model); pronunciation: baibai 拜拜 (bye-bye); and phonetic notation: misite 密斯特 (Mister).

Semantic loans refer to the translation of word meaning and meaning explanation, for instance, meaning explanation: jisuanji 计算机 (computer); word meaning: mali 马力 (horsepower).

Loan blends refer to a term that has foreign elements and indigenous morphemes and categorizes as four types:

1. either foreign elements or native components within the structure of a loanword (pijiu 啤酒 [beer] — sound plus generic name);
2. both phonic and semantic borrowing from an entire foreign word (yintewang 因特网 [internet] — part foreign sound plus part foreign meaning);
3. the foreign term is divided in two parts — phonic loan plus original (tixu T恤 [T-shirt]; witaming bi 维他命 B [vitamin B]);
4. The foreign word is in two parts — semantic loan plus original letter (*aikesi guang* X 光 [X ray]; *shibakai jin* 18 K 金 [18 karat gold]).

Foreign-inspired Chinese terms are motivated by foreign entities or concepts relating to human perception and cognition such as vision, hearing, touching, taste, smell and motor movement, for example, *huangyou* 黄油 (butter), *banma* 斑马 (zebra), *taowa* 套娃 (Russian doll), *haowai* 号外 (newspaper extra), *yangcong* 洋葱 (onion), *fanqie* 番茄 (tomato), and *hujiao* 胡椒 (pepper). Detailed discussion will be seen in chapters from 5 to 7.

2.5 Relevant Publications

There are no special works on foreign-inspired Chinese terms in the linguistic literature, but there is research on loanwords in different languages. Haugen (1950) systematically summarized types of linguistic borrowing and defined them as loanwords, loan blends, loan shifts and creation. According to Haugen, loanwords show morphemic importation without substitution. Loan blends show morphemic substitution as well as importation. Loan shifts show morphemic substitution without importation. Haugen’s study is concerned with his classification of borrowings. However, his analysis is limited to the European languages. Chinese language differs from them. As pointed out by Zuckermann (2003), Haugen’s treatment has two main shortcomings: omission and inappropriate categorization (p. 6) of borrowings. In
other words, Haugen only simply proposed the classification and did not categorize them. Moreover, Haugen’s treatment employs the historical (comparative) method, and agrees that a descriptive methodology (synchronic linguistic studies) can be used to investigate loanwords in languages (1950: 229). However, his historical or descriptive methods seem to be somewhat out of date for research on different language borrowings, because the borrowing can be applied to other methods such as sociolinguistic and cognitive linguistic methods. Haugen’s ‘creation’, referring to words ‘secondarily created within borrowing language’ (1950: 220) in his classification, was similar to the present theme of study, and he suggested that the ‘creation’ cannot have come into being ‘as direct imitations of a foreign model’ (p. 220), that is it cannot be a direct semantic translation from foreign languages. No doubt his formulation is right, since the ‘creation’ is a reproduction for ‘a foreign model’ (words) and seems to be a production by foreign entities within a borrowing language.

Chan and Kwok (1982/1990) investigated loanwords from English in Cantonese dialect with historical and sociolinguistic approaches. In their study, a fairly exhaustive list of loanwords from English in use in Hong Kong was provided in an appendix. This is a valuable list of loanwords in Chinese linguistic study. Apart from this list, Chan and Kwok showed the probable reasons for borrowing; analysed phonetically, graphitically, grammatically and semantically changes during the course of importation; classified the five stages of integration, such as pre-loan stage; stage of using written in English (e.g. ‘L牌’ clipping of ‘learner-drivers’ + ‘plate’, ‘V字领’
V-necked); stage of a sinicized form in the spoken languages and in accepted Chinese characters (e.g. 妈咪 mummy, 贴士 tips); stage of using on formal occasions and in more formal writing (e.g. 士多啤梨 strawberry, 曲奇 cookie); and stage of accepting in standard Chinese (e.g. 坦克 tank, 雷达 radar). These five stages reflected specific characteristics of loanwords are part of a general domestication process in Cantonese. However, these characteristics are restricted within phonetic borrowings, while semantic and other loans are not discussed. It is remarkable that when Chan and Kwok talked about naming new things, they discussed the methods of naming foreign entities:

1. The users consider the new object without any reference to the foreign ‘name’ of the referent. For example, the word ‘hockey’ is named as 曲棍球 (crooked stick, ball), ‘vacuum’ as 吸尘器 (catching dust, machine).

2. Coping with the need for new ‘names’ based on the use of native resources, for example, 洋葱 (foreign/western, onion) and 西兰花 (western, blue, flower).

3. Loan translation by which the language deals with the naming of imported ‘things’ through direct semantic translation, for example, 热狗 (hot dog).

4. Phonetic loan where the borrowing cannot be carried out phoneme for phoneme because the two languages have different syllable structures. For example, 吉普 (jeep), 沙拉 (salad).
These four methods of reproduction of foreign things in Cantonese are basically identical with ways of borrowings in Mandarin Chinese. Chan and Kwok highlighted the first two methods in their study because there are many words that are produced by ‘reference’ (p. 14) of foreign entities in Cantonese. That is, these two kinds of words are associated with ‘reference’ of concrete entities in the process of production from the perspective of cognitive semantics approach. Detailed discussion on the motivation of production for foreign entities will be returned to in chapters 5, 6 and 7.

In his monograph, Ghil’ad Zuckermann (2003) also spoken of the stage of borrowings as discussed above. He assumed that the process of borrowing can be analysed into three stages:

1. Input analysis: examination of the constituents of the source language word, for instance, sense, referent, sound and etymology.
2. Identification of words in target language parallels to those constituents.
3. Output production: creation of a neologism, usually (but not always) taking into account the target language morphophonemic characteristics (p. 7).

These three stages differ from Chan and Kwok’s (1982/1990) statements. As we have indicated, Chan and Kwok’s stages are restricted with the phonetic borrowings in Cantonese. The stages of borrowing proposed by Zuckermann (2003) are concerned in either phonetic borrowing or variety of borrowings. In order to cover all linguistic
borrowing phenomena, he suggested the two major stages of word borrowings in different languages:

a) using the source language lexical item as the basic material for neologization;

b) using pre-existent target language roots/lexemes as the basic material for the neologization (Zuckermann, 2003: 8).

Stage (a) contains three kinds of borrowing: guestword, foreignism and loanword. The guestword is an unassimilated lexical item, which has kept its pronunciation, orthography, grammar, and meaning, and it not used widely. The foreignism is a lexical item which has been adapted into the native system, with a stable spelling and pronunciation, and often with secondary derivatives. The loanword is a lexical item that has become indistinguishable from the rest of the lexis and is open to normal native rules of word formation and use.

Stage (b) involves also three methods of borrowings: phonetic matching; semanticized phonetic matching; and phono-semantic matching. Phonetic matching refers to those that the target language material is originally similar to the source language lexical item phonetically but not semantically; Semanticized phonetic matching denotes that the target language material is originally similar to the source language lexical item phonetically, as well as semantically albeit in a loose way; Phono-semantic matching means that the target language material is originally similar
to the source language lexical item both phonetically and semantically (Zukermann, 2003: 8). Based on examples of borrowings in different languages, such as Yiddish, English, French, German, Portugal, Chinese, Japanese, Turkish, Zuckermann enriched the principle ‘semantic loan’ proposed by Haugen (1950) as described above.

Apart from two types of borrowings ‘substitution’ and ‘importation’ derived from classification of Haugen (1950), Zuckermann (2003) presented a new type of simultaneous substitution-importation. Substitution refers to phonemic and morphemic replacement of foreign words, whereas importation denotes phonemic and morphemic adoption from foreign words. It is remarkable that Zuckermann (2003) illustrated the type of simultaneous substitution-importation with Chinese examples: *nihongdeng* 霓虹灯 (neon), consisting of *ni* 霓 (‘female/secondary’ rainbow, origin from Chinese folklore—Ogawa et al, 1968: 1087, cited by Zuckermann, 2003: 57), *hong* 虹 (‘male’ rainbow, origin from Chinese folklore—ibid.) and *deng* 灯 (light/lamp/lantern); *tuolaji* 拖拉机 (tractor), making use of *tuo* 拖 (haul/pull/drag/draw), *la* 拉 (pull/drag/draw/tug) and *ji* 机 (machine/engine). Indeed, this is a type of phono-semantic matching called by Zuckermann (2003: 7, 58-61). This type includes a translated part + foreign phonemic part in a term of target language.

In Chinese linguistic literature, although there has been a long history of loanword studies in Chinese, only a few comprehensive monographs have so far been published on borrowed words from English and Russian languages, such as Gao
Mingkai and Liu Zhengtan (1958), Shi Youwei (1991, 2000) and Masini (1993). These four monographs focus on investigation of how loanwords are imported into Chinese.

The Study of Loan Words in Modern Chinese by Gao Mingkai and Liu Zhengtan (1958) is the first monograph on loan words in Chinese literature. In their work, Gao and Liu investigated the definition of loan words, history of loan words, borrowings from different languages in modern Chinese, loan words of modern Chinese and development of national culture, ways of production of loan words in modern Chinese, and the issue of standardization for loan words in modern Chinese. On the definition of loan words, they thought the words with foreign sound and meaning are loans in Chinese, but words with foreign meaning only are not. From the perspective of ways of reproduction for loan words, the words with foreign meaning are semantic loans. It is clear, for Gao and Liu, semantic loans which reproduced by indigenous linguistic components (Chinese sound and form) are excluded from borrowed words in modern Chinese. On the other hand, Masini (1993) holds that there is ‘a semantic link between the phonemic and the graphic shape of the word’ (p.141). Obviously, Masini views semantic loans as a member of Chinese borrowings.

In their monograph, Gao Mingkai and Liu Zhengtan (1958) analysed the ways of production or reproduction for loan words in modern Chinese. They suggested that there are different ways of reproduction of loan words in terms of phonetics, vocabulary, and grammar in Chinese. Considered loan words from English, they listed 19 ways of reproduction. Based on these ways of reproduction, they have
concluded that original words are reproduced by the phonetic system of modern Chinese in the level of phonetic structure, and there is a regularly correspondence between source and target pronunciations.

In the level of vocabulary of loan words, original (source) meanings of words should be adapted to the target lexical system. There are three ways of reproduction in the level of vocabulary:

1. simultaneous phono-semantic matching, e.g. yinde 引得 (index), kekou kele 可口可乐 (coca cola);
2. using characters with radicals representing generic meaning, and enabling people to understand to which category a new word belongs, e.g. ningmeng 柠檬 (lemon), mangguo 芒果 (mango);
3. part of phonetic + part of semantic reproduction, e.g. motuoche 摩托车 (motor car), daolinzhi 道林纸 (Dowling paper).

At the level of grammar, foreign language paradigm and inflexion representing grammatical categories do not affect the reproduction of loanwords in modern Chinese. In other words, reproduced foreign words with grammatical gender, number and case, Chinese native speakers adapted the roots or nominative case, i.e. the first form of words appeared in dictionaries, and they did not import the grammatical category of foreign words. For example, the Russian word ‘ведро’ (vedro [bucket]) is reproduced to be futuoluo 浮驼罗. This Chinese term only has a word form when it
is using in different context, and it cannot perform as it in the Russian language.

The monograph of Gao Mingkai and Liu Zhengtan (1958) also involves the issue of standardization of loan words in modern Chinese. In their book, Gao and Liu collected and presented 1,178 terms of 29 categories, indicating the diversity of loan words in modern Chinese. With the various classifications of loan words in terms of ways of reproduction and usage, loan words need to be standardized according to modern Chinese principles of word production or formation. Gao and Liu proposed two major principles of loan word standardization: First, a loan word can only have one pronunciation pattern, and one written form; and second, an original word can have two different forms, i.e. the co-existence of a loan word and an indigenous word. These two principles are important for standardization of loan words. For example, an original word ‘chocolate’ can be more than eight forms of phonetic loans: *qiaokeli* 巧克力, *qiaoguli* 巧古力, *qiaogeli* 巧格力, *zhuguli* 朱古力, *zhugulü* 朱古律, *zhagulü* 查古律, *zhagulie* 查古列, *zhuguli* 诸古力. According to Gao and Liu (1958: 178), one standard word should be adopted in terms of the principle of one word-one pronunciation-one form, namely, one pronunciation pattern and one written form; The rest of them should be excluded from the written system of modern Chinese. The word *qiaokeli* 巧克力 (chocolate) was adopted as a standard, following six detailed rules: a) popular; b) phonetic; c) simple; d) historical; e) semantic; and f) grammatical. In addition, the second major principle is more important for our study, because it allows existing two types of borrowings from an original word: phonetic loan, indigenous word. For example, the English word ‘guitar’ can be two terms of modern
Chinese as *jita* 吉他, *liuxianqin* 六弦琴; ‘microphone’—*maikefeng* 麦克风, *kuoyinji* 扩音机; ‘piano’— *piyanuo* 披亚诺, *gangqin* 钢琴. Obviously, phonetic loans such as *jita* 吉他 (guitar), *maikefeng* 麦克风 (microphone), and *piyanuo* 披亚诺 (piano) from examples above are borrowed words, but the words *liuxianqin* 六弦琴 (guitar), *kuoyinji* 扩音机 (microphone), *gangqin* 钢琴 (piano), considered by Gao and Liu as indigenous words, are defined as foreign-inspired Chinese terms in this study. The latter three words are regarded as peripheral borrowings in terms of theory of categorization within cognitive semantics (see chapter 4).

The problems surrounding loanword standardization have also been reviewed in *Beijing Shifan Xueyuan* (1959), in which confusion in the use of translated terms was highlighted between 1898 and 1911. During this time phonetic borrowings and free translation words were often used interchangeably. Only following the May Fourth Movement in 1919 were these two forms of borrowings successfully integrated into Chinese language. In 1959, Lin Tao put forward a number of principles for the standardization of borrowings addressing the issues of universality and validity. He also discussed four methods of borrowings in modern Chinese, including phonetic borrowing, semantic borrowing, phonetic plus semantic borrowing, and borrowing from the Japanese language. In 1962, Gao Mingkai also introduced a theoretical framework in which loan words could be successfully assimilated within the confines of the internal rules of Chinese language. It was not until after the Chinese Cultural Revolution (1966-1976) that the issue of the standardisation of word borrowings was finally addressed (during a meeting of the State Language Work Committee), and
successfully integrated by an authoritative institution. However, it was not until 31 October 2000 that language normalisation (which included the standardisation of word borrowing) was finally introduced, appearing in The State General Language Act which was eventually put into effect by The National People’s Congress on 1 January 2001.

Two monographs by Shi Youwei (1991, 2000) are masterpieces in the field of Chinese borrowings for the recent years. In his works, Shi Youwei systematically summarised the previous research on historical recall, nature and function of borrowings, types of loan words, tendency and standardization, as well as a brief account of investigation of borrowings in modern Chinese. Apart from these, his work also involves the history of cultural communication with other nations.

2.6 Early Research Clue for Foreign-inspired Chinese Terms

In Chinese linguistic history, the characters hu 胡 (foreign) and fan 番 (foreign) as morphemes referring to foreign concepts and meanings are used to name exotic entities. Generally speaking, the application of these characters can be viewed as conceptual representations of foreignness. There are also other Chinese characters with similar meaning. For example, the character xi 西 (western) in xigua 西瓜, ‘western melon’, is a concept for ‘foreignness’ from an oriental point of view. It was used to name ‘watermelon’ when it was imported into China during the period of the Silk Road around 139 BC (Yip Po-ching, 2000: 327-328). Another character yang 洋
(foreign) in Yangcong 洋葱, ‘foreign onion’, represents a concept from foreign countries. The character Yang 洋 (foreign) which expressed the foreignness in the word meaning is later than other characters Hu 胡 (foreign), Fan 番 (foreign) and Xi 西 (western/foreign) in Chinese linguistic history (Huang Heqing, 2003).

The Chinese linguist Luo Changpei (1950/1989) defined characters like Hu 胡 (foreign), Yang 洋 (foreign), Fan 番 (foreign), Xi 西 (western/foreign) as descriptive forms of loan words, in which ‘natural products or artefacts from exotic lands are often referred to with terms prefixed by words indicating foreignness’ (Yip Po-ching, 2000: 344). This formulation ‘descriptive forms’ as a category of borrowing was proposed by Luo Changpei (1950/1996) for the first time. However, some Chinese linguists do not support Luo’s classification of descriptive forms. Among them, Zheng Dian (1956) suggested that descriptive forms are not a category of borrowing because they are made not of any foreign elements of words such as sound, form and meaning. However, the words formed of this kind of characters as the prefix reflect cultural and material communication between China and foreign countries. This kind of words is a symbol of culture, where traces of communication have remained in the history of China.

Another linguist Wang Zongyan (1951/1990) classified semantic loans into five types, including: literal translation; translation with adding characters; translation with reducing characters; translation with changing originals; and fabricating. The first three methods can be understood as translation loans, while the last two are associated with the theme in this study. The fourth method contains A and B subtypes.
Wang defined B subtype in fourth method as ‘not literal translation and linking to original’ (Wang Zongyan, 1951/1990: 73). For example, the English word ‘telegraph’, meaning ‘faraway letter’, is produced to be dianbao 电报 ‘electrical report’; the word ‘airplane’ as feiji 飞机 ‘flying machine’; the term ‘anti-aircraft gun’ becomes another meaning gaoshepao 高射炮 ‘high, shot, gun’. This definition and examples are close to our research idea which the words are actually inspired by foreign entities or concepts. Wang’s fifth method is a special type of borrowing that does not correspond to the original in terms of word production and word structure. This kind of word derives from spoken language, for example, the words xiangjiao 橡胶 (rubber), original name ‘caoutoone’; gangqin 钢琴 (piano, original form ‘pianoforte’); zhaoxiangji 照相机 (camera), original meaning ‘darkroom’. It is interesting to note that although it was not created by scholars (Wang Zongyan, 1951/1990: 74), it still used in modern Chinese widely. Moreover, it is necessary to investigate this kind of words as a category of Chinese borrowings.

In regard to standardization of loan words, Gao Mingkai and Liu Zhentan (1958) assumed co-existence of two types of borrowings from an original ‘phonetic loan and indigenous word’ (Gao & Liu, 1958: 183). They suggested that one of the two types of borrowings such as liuxianqin 六弦琴 (guitar), kuoyinji 扩音机 (microphone), gangqin 钢琴 (piano), which were called generally ‘semantic loans’ in linguistic literature, is a neologism formed of existing linguistic constituents of the target language, and not loan words or words from foreign languages. They thought this kind of word easily substituted for loan words, because it was made in terms of a

Zhang Xuezeng (1995) took part in the discussion on the term wailai gainianci 外来概念词 (foreign conceptual words) in the journal Ciku Jianshe Tongxun (1993—2001), where this discussion stimulated a debate on categories of Chinese borrowings. Some articles published in this journal defended the term wailaici 外来词 (loan word/borrowing). Zhang argued that the names of playing cards belong to foreign conceptual words in modern Chinese: that heitao 黑桃 (spade), hongtao 红念 (heart), fangkuai 方块 (diamond) and meihua 梅花 (club) have been renamed by imagery reproduction (Zhang Xuezeng, 1995: 24-25). This is a very cogent argument, and there are many similar words in modern Chinese that are produced in this way. Such borrowings are typical foreign-inspired Chinese terms that will be investigated in this study.

2.7 Some Dictionaries of Loan Words

A Dictionary of Loan Words in Chinese (1936) was edited by Hu Xingzhi 胡行之, containing some ‘imported neologisms’. The Group of Compilation and Translation for the Publication Section in The National Language Daily News (国语日报出版部编译组) later edited A Dictionary of Foreign Loans of the National Language Daily News (1981), which contained 1,820 entries and is considered the first dictionary of modern Chinese loan words. It includes both full and partial phonetic borrowings of words, phrases, and proper nouns, all with strong cultural
meanings. Although all of the entries in this dictionary are marked with the national phonetic alphabets, English written forms, and the etymology of some entries, the words from Japanese characters are not included.

Another important dictionary of loan words in mainland China is *A Dictionary of Foreign Loans* (*Hanyu wailaici cidian* 汉语外来词词典) (Liu et al., 1984). It contains more than ten thousand entries with full or partial phonetic borrowings, plus words formed from characters in Japanese language, as well as borrowings from languages of minority nationalities within China. The original form, etymology and variants of most entries are also clearly given. However, there are a number of limitations of this dictionary, including the fact that there is no indication of the source of most entries; that limited explanation of the use of borrowings from Russian is given; and the incorrect inclusion of some Chinese characters from Japanese.

In 1990, Cen Qixiang 岑麒祥 compiled *A Chinese Dictionary of Loan Words*, with 4,307 entries, containing phonetic and semantic borrowings, as well as words from Japanese characters. In its many entries it included the names of persons and places, and the source of its numerous quotations.

It is remarkable that *An Etymological Glossary of Selected Modern Chinese Words* (近现代汉语新词词源词典) was published by the Chinese Language Society of Hong Kong (CLSHK) in 2002. According to the preface of the Glossary, ‘modern Chinese’ refers to the beginning of 19th and the middle of 20th centuries. It contains 5,275 entries appeared during this period. Among them, the main entries have more than 1,700. Generally, more than five thousand entries in the glossary are considered
as loan words in modern Chinese. In this glossary, loan words consist of phonetic and semantic loans in Chinese neologisms. Based on this kind of neologisms, most examples of foreign-inspired Chinese terms for our study are selected in terms of linguistic principles of cognitive semantics.

In summary, this chapter has reviewed the definition, historical background and range of use of loan word terminology in modern Chinese. It is clear that the term ‘borrowing’ proposed by Yuan Ren Chao (1970) fits the situation of modern Chinese in general. It then examined the classification of loan words in modern Chinese, and formulated a classification of Chinese borrowings as four types: phonic loans, semantic loans, loan blends and foreign-inspired Chinese terms. Reviewing the classification of Chinese borrowings, relevant research presented on borrowings in different languages, particularly in Mandarin Chinese and Cantonese. Methods of reproduction for foreign words were examined, along with the way of naming foreign entities, and standardization of Chinese borrowings in the past research. The review then focused on research clues for foreign-inspired Chinese terms, and noted the different formulation for foreign-inspired Chinese terms in the relevant literature. Different points in past research constituted sources of our study. Finally, some dictionaries of Chinese loan words were introduced. These collected many entries of different kinds of Chinese words during the period from last two centuries.

In reviewing the relevant past literature, it was found that the classification of Chinese borrowings is confused in terms of recognition and understanding of loan
words in modern Chinese. It is necessary to identify a new category of Chinese borrowings. A categorization of Chinese borrowings in modern Chinese will be discussed especially in Chapter Four and a new relationship and distinction will be indicated. Furthermore, the new category of foreign-inspired Chinese terms needs a rational explanation with a new approach and a new classification, and for this the next chapter presents a number of assumptions.
Chapter Three
Theoretical Basis and Methodology

3.1 Introduction

Following the literature review on Chinese borrowings and the statement of the research problem in Chapter Two, the approach adopted to analysing FICT is based on cognitive semantics. Cognitive semantics is an approach to the study of mind and its relationship with embodied experience and culture. Section 3.2 outlines the development, theories and principles of cognitive semantics. Other relevant theories such as prototype theory, image schemas, and conceptual metaphor are also briefly discussed. Prototype theory refers to the nature and structure of concepts (Cruse 2006: 146-148). Image schemas are very basic conceptual elements which contribute to construing more complex conceptual structures (Cruse 2006: 84). In Section 3.3, four assumptions are formulated. These assumptions are: (1) Foreign Inspired Chinese Terms can be classified as the fourth category of lexical borrowings in Chinese after the three established categories of phonic loans, semantic loans and loan blends; (2) Foreign Inspired Chinese Terms and other three established categories of borrowings are cognitively motivated; (3) Foreign Inspired Chinese Terms are motivated by different cognitive and functional features of the entities designated by them; (4)
Most Foreign Inspired Chinese Terms are modeled semantically by ‘distinctive properties + generic name’. In Section 3.4, discusses data collection for this study. Observation enables us to collect and select about 150 words from everyday life. About 800 terms as collected data came from *An Etymological Glossary of Selected Modern Chinese Words* (CLSHK, 2002). Finally Section 3.5 describes the data analysis.

3. 2 Cognitive Semantic Approach

Cognitive semantics is the study of the relationship between experience, embodied cognition and language. Cognitive semantics is often viewed as a main area of cognitive linguistics, which is the study of language in a way that is compatible with what is known about the human mind. It treats language as reflecting and revealing the mind (Evans & Green 2006: 50). Four guiding principles are: Conceptual structure is embodied; semantic structure is conceptual structure; meaning representation is encyclopedic; meaning construction is conceptualization.

Conceptual structure is ‘the cognitive system that represents and organizes experience in a form that can serve as the input for processes such as reasoning and expression in language’ (Evans & Green, 2006: 201). Cognitive semanticists concern the nature of the relationship between conceptual structure and the external world of sensory experience. They set out to explore the nature of human interaction with and awareness of the external world, and to build a theory of conceptual structure.
consonant with the ways we experience the world (Evans & Green, 2006). Moreover, cognitive semanticists hold that the nature of conceptual organization arises from bodily experience, and the meaning derived from conceptual structure is the bodily experience with which it is associated.

Semantic structure is ‘the system wherein concepts are conventionally encoded in a form in which they can be externalized by language’ (Evans & Green, 2006: 201). Semantic structure which is associated conventionally with words and other linguistic units in meanings is considered to equate with concepts. Actually, this equality of semantic structure and concepts exists in that the meanings associated with words form a set of possible concepts. That is to say, the concept derives from meanings of words. As a subpart of conceptual structure, semantic structure reflects an extreme form of subjectivism: concepts are divorced from the world that they relate to (Sinha, 1999).

Cognitive semanticists work on the assumption that word meaning is encyclopedic in nature. Semantic knowledge is grounded in human interaction with others—social experience—and with the surrounding world—physical experience. It follows that word meanings cannot be understood independently of the vast system of encyclopedic knowledge to which it is linked. This line of analysis supports the thesis of embodied cognition, which asserts that mental representations are perceptual in nature. Cognitive semanticists suggest that knowledge is represented in the mind as perceptual symbols.

The statement that meaning construction equates with conceptualization means
that meaning is constructed at the conceptual level. Words and other linguistic units are only prompts for the construction of meaning, while construction of meaning draws upon encyclopedic knowledge and involves inferences relating to different aspects of conceptual structure, organization and packaging (Sweetser, 1999). Meaning construction is also a dynamic process where linguistic units serve as prompts for an arrangement of conceptual operations and recruitment of background knowledge.

Apart from these four major principles, cognitive semantics is concerned also with prototype theory (Rosch, 1975, 1977, 1978; Rosch et al, 1975, 1976; Geeraerts, 1988), image schema theory (Johnson, 1987; Lakoff, 1987, 1990; Gibbs & Colston, 1995), and conceptual metaphor and metonymy (Gibbs, 1994; Lakoff, 1993; Lakoff & Johnson, 1999). These theoretical approaches are useful for discussion of foreign inspired Chinese terms and are explained below.

The prototype theory concerns the nature and structure of concepts (Cruse, 2006: 146-148) originates in the mid 1970s with Eleanor Rosch’s research into the internal structure of categories. It is considered, generally, that Rosch and others together develop the classical theory of human categorization since the time of the ancient Greek philosophers, over 2,000 years ago. The classical theory, also known as the definitional theory, denotes the prevalent model since the time of Aristotle and holds that conceptual and linguistic categories have definitional structure. Definitions typically take the form of a set of features, which are individually necessary for membership of the category and jointly sufficient (Cruse, 2006: 23). Rosch and others
proposed (Rosch, 1975, 1977, 1978; Rosch et al, 1975, 1976; Geeraerts, 1988) that people categorize ‘not by means of necessary and sufficient conditions, but to a prototype, a relatively abstract mental representation that assembles the key attributes that best represent instances of a given category’ (Evans & Green, 2006: 249). Therefore, the prototype is considered a schematic representation of the most salient or central characteristics associated with members of the category in question. In addition, prototype theory cannot be directly interpreted as a theory of knowledge representation. It demands to be accounted for by some theory of categorization in terms of empirical research findings. This result reflects in prototype (typicality) effects which have been psychologically proven in the Rosch and others’ research.

Based on the empirical research, cognitive psychologists have assumed that there are two basic principles that guide the formation of categories in human mind: ‘the principle of cognitive economy and the principle of perceived world structure’ (Evans & Green, 2006: 255). People attempt to gain as much information as possible about their environment while minimizing cognitive effort and resources. In the process of grouping similar individual stimuli into categories, people rely upon correlational structure of attributions in different entities in order to form and organize categories.

The theory of image schemas is first developed within cognitive semantics. Image schemas are ‘very basic conceptual elements which contribute to the construal of more complex conceptual structures’ (Cruse, 2006: 84). The notion of an image schema is closely associated with the development of the embodied cognition thesis proposed by Lakoff and Johnson (1980, 1999). Image schemas derive from sensory
and perceptual experience as we interact with and move about in the world. Suppose that the asymmetry of the body’s vertical axis is meaningful for us because of the way we interact with our environment. ‘Gravity ensures that unsupported objects fall to the ground. Given the asymmetry of the human vertical axis, we have to stoop to pick up fallen objects and look in one direction (downwards) for fallen objects and in another (upwards) for rising objects’ (Evans & Green, 2006: 178). This experience gives rise to an image schema: up-down schema. Similarly, other kind of image schemas results from our recurrent and ubiquitous experience of body and can give rise to more specific lexical concepts.

Metaphor as a discipline originated in ancient Greek and was used for over 2,000 years within Rhetoric. Metaphor refers to a variety of non-literal use of language and is probably the most important aspect of the flexibility and creativity of language (Cruse, 2006). For the last twenty years, metaphor is being developed as contemporary conceptual metaphor by George Lakoff and Mark Johnson (1980), Lakoff and Mark Turner (1989), Lakoff (1987, 1993), Zoltan Kövesces (2002), Joseph Grady (1999). Conceptual metaphor forms one of the earliest theoretical frameworks identified as part of cognitive semantics. The basic premise of conceptual metaphor is that metaphor is not simply a stylistic feature of language, but that thought itself is fundamentally figurative in nature. Conceptual metaphor concerns ‘essentially a relation between conceptual domains, whereby ways of talking about one domain (the source domain) can be applied to another domain (the target domain) by virtue of correspondences between the two’ (Cruse, 2006: 31). Following these
views, for metaphor, conceptual structure is organized according to cross-domain mappings or correspondences between conceptual domains (Kövesces & Radden, 1998).

These theories serve for description of foreign-inspired Chinese terms as the main line of this whole study. In other words, the main body of the study will be made up of above theories which can be applied to selecting, organizing and analyzing relevant materials of Chinese borrowings, particularly foreign-inspired terms. The prototype theory is used for division of categories of Chinese borrowings and identification of foreign-inspired terms, while image schemas, conceptual metaphor contribute to analysis of the word production (reproduction), and motivations of foreign-inspired Chinese terms. The cognitive semantics approach may distinguish and identify new categories of Chinese loanwords and analyze processes by which foreign-inspired Chinese terms of are imported into modern Chinese through the sensory-perceptual, and metaphorical production. In addition, the traditional theoretical perspectives, such as functional, structural analyses are also utilized in the word formation and word structure for example. Foreign-inspired Chinese terms as the theme of the study still remain as assumed. This needs to be stated in detail.

3. 3 Assumptions

Assumptions are statements that are assumed to be true and from which a
conclusion can be drawn. All academic explorations are based on theoretical assumptions, although these theoretical assumptions are not always stated explicitly. The major theoretical assumption upon which this study is based is that foreign-inspired Chinese terms are motivated cognitively and can be described. This major assumption categorizes four points as follows:

1. Foreign-inspired Chinese terms can be classified as the fourth category of lexical borrowings in Chinese other than the three established categories: phonic loans, semantic loans and loan blends;
2. Foreign-inspired Chinese terms and three other established categories of borrowings are cognitively motivated;
3. Foreign-inspired Chinese terms are motivated by different cognitive features of the entities designated by them;
4. Most foreign-inspired Chinese terms are modeled semantically by ‘distinctive properties + generic name’.

Foreign-inspired Chinese terms can be classified as the fourth category of lexical borrowings in Chinese as distinct from the three established categories of phonic loans, semantic loans and loan blends.

Some examples of foreign-inspired Chinese terms are the words *qingmeisu* 青霉素 (green, mould, element [penicillin]), *huangyou* 黄油 (yellow, grease/oil [butter]), *taowa* 套娃 (cover/set, baby [матрёшка—Russian doll]), *yangcong* 洋葱 (foreign,
shallot [onion]). Such words were not directly transliterated or translated from foreign words, but were coined to name the entities designated by some foreign words, that is to say they were inspired by their shape, color, size or meaning. They fall into the category of foreign-inspired Chinese terms in this study. However, these words are not considered as Chinese borrowings by many scholars since they do not sound foreign and they look genuinely Chinese. Only a few Chinese researchers (Wang Li, 1993; Luo Changpei, 1950/1996) categorized them as semantic loans (qingmeisu 青霉素 [penicillin]; huangyou 黄油 [butter]) or descriptive forms (yangcong 洋葱 [onion]; fanqie/xihongshi 番茄/西红柿 [foreign, eggplant [tomato]/western, red, persimmon [tomato]). But foreign-inspired Chinese terms as a category have not been recognized in the linguistic literature.

This study redefines the categories of Chinese borrowings with prototype theory (Rosch, 1975, 1977, 1978; Rosch et al, 1975, 1976). Prototype theory concerns the nature and structure of concepts (Cruse, 2006: 146-148) and has been two principles of categorization: cognitive economy and perceived world structure in the human mind (Evans & Green, 2006: 255). These principles state that (1) people attempt to ‘gain as much information as possible and (2) the surrounding world has correlational structure’ (p.255). Based on the sound, form and meaning of Chinese words and the principles of prototype theory, this study proposes foreign-inspired Chinese terms as fourth category of Chinese borrowings in contrast with the other three established categories—phonic loans, semantic loans, and loan blends. The categories may be illustrated with examples as follows:
1. phonic loan: *yinqing* 引擎 (draw, lift up [engine])

2. semantic loans: *mali* 马力 (horse, force [horse power])

3. loan blends: a. *yintewang* 因特网 (follow, special, net [Internet]); b. *pijiu* 啤酒 (pi, alcohol [beer]); c. *aksiguang* X 光 (aiks, light [X-ray])

4. foreign-inspired Chinese terms: *bayinhe* 八音盒 (eight, sound, box [music box])

The reason for the classification goes back to characteristic features. In the four groups mentioned above, the six examples have a cluster of common attributes: foreign concepts (meaning); foreign etymology; and foreign culture. These three common attributes have equal status as borrowings within the category. The six examples share common attributes with each other, and bear a family resemblance to each other. Family resemblance refers to ‘the idea that members of a category may be related to one another without all members having any properties in common that define the category’ (Lakoff, 1987: 12). From this point of view, all six examples should belong to the category of Chinese borrowings.

Groups 1, 2 and 3 were established and sanctioned by scholars in the linguistic literature. Accordingly, foreign-inspired Chinese terms in group 4 should be included in the category of Chinese borrowings based on the prototype theory.

Foreign-inspired Chinese terms and the three other established categories of borrowings are cognitively motivated.

The cognitive motivations of foreign-inspired Chinese terms are the key focus of
investigation of this thesis. Motivation refers to non-arbitrary links between a form and meaning of linguistic expressions (Dirven & Verspoor, 2004: 13). Any linguistic sign has a form and meaning which is identical with a concept. A meaning or concept relates to some entity in the world as experienced (p.14). This is why cognitive semanticists question the arbitrariness of language. Although linguistic signs have a certain arbitrariness at the basic level of vocabulary, they are motivated at superordinate or subordinate level vocabulary during formation of compound words and word groups. Foreign-inspired Chinese terms as a category of Chinese borrowings are cognitively motivated rather than arbitrary as suggested by Ferdinand de Saussure (1916).

All borrowings are motivated when they are reproduced in Chinese. Here ‘reproduce’ means reproduction as it is for the Chinese borrowings from foreign words, while the term ‘production’ in the study serves for foreign-inspired Chinese terms made of foreign entities or concepts. Human cognition and perception in the process of reproduction are reflected in foreign sounds, meanings/concepts of words, or the foreign shape, size, color and concepts of entities. The factor of motivation is at work in both the hearer and speaker. The hearer wants to make sense of linguistic expressions, particularly the borrowings. Phonic loans are transliterated from foreign sounds, such as the English words ‘copy’ and ‘coffee’ as kaobei (beat, shellfish), kafei 咖啡 (special characters for sound borrowings) in Chinese. On the phonic level, the form of a borrowed item is determined by phonic transliteration, which is by the replacement of sounds or phonemes in the donor language, by
phonemes of the borrowing language. From the point of view of motivation, phonic
loans are reproduced by foreign sounds. Characters in sound borrowings usually only
record foreign sounds, and do not represent their meaning in modern Chinese, just as
in words kaobei 拷 贝 (copy) and kafei 咖 啡 (coffee)—no meaning, specially
produced for foreign sounds. Semantic loans are translated from foreign meaning and
structure as lanpishu 蓝皮书 ([blue, cover, book] blue book), chuanbo 传 播 ([pass
on, sow] diffuse, diffusion). Semantic borrowings are instances of borrowing where
the choice of indigenous characters is determined by the meaning of the foreign word.
Semantic loans are used in cases where there is no indigenous word to represent a
foreign entity or concept. Semantic borrowings comprise semantic loans and loan
translation in word structure. From the perspective of productive motivation, the word
meaning is produced by the foreign original, and it has been the correspondence
between donor and borrowing languages as it appeared in words lanpishu 蓝皮书
(blue book), and chuanbo 传播 (diffuse, diffusion). Loan blends are mixed words
which involve foreign sounds plus indigenous generic terms, or foreign sounds plus
foreign meaning, or foreign meaning plus indigenous generic terms, such as jipuche
吉 普 车 (lucky, universal, vehicle, [jeep], daolinzhi 道 林 纸 (road, forest, paper.
[glazed printing paper/Dowling paper], nongchang 农 场 (farming/agriculture, place,
[farm]). These borrowings contain foreign components in the form, sound and
meaning which are composed of respective motivation elements. Foreign-inspired
Chinese terms are composed of foreign shape, size, color, concepts of entities as
listed under the first assumption above. In addition, there is another example, the
English word ‘train’, which means ‘line of railway vehicles,’ named by a property of the entity. While the Chinese word *huoche* 火车 (train), which means ‘fire’ and ‘vehicle’, is renamed from a dynamic perspective. In the renaming process the function of steam is replaced by fire, because the phenomenon of ‘fire’ seems to be seen directly, although ‘only wheels of the vehicle are pulled by fire’ (Masini, 1993: 179). Thus, the meaning ‘fire’ is motivated by a sense of vision and function in terms of properties of word production for foreign-inspired Chinese terms.

Foreign-inspired Chinese terms are motivated by different cognitive features of the entities designated by them.

This study is focused on two ways of producing the foreign-inspired Chinese terms: sensory-perceptual experience, and metaphorical mapping (Johnson, 1987; Mandler, 2004; Lakoff & Johnson, 1980; Lakoff, 1993; Gibbs, 1994; Kövecses & Radden, 1998; Radden & Panther, 1999; Yu, 1998). Each type will be explained below:

1. sensory perceptual experience:

(1) *baidagua* 白大褂 (white, big, gown [doctor’s coat])

(2) *qingmeisu* 青霉素 (green, mould, element [penicillin])

(3) *huangyou* 黄油 (yellow, grease/oil [butter])

These three examples are produced by senses of vision-color from the point of view of sensory-perceptual word production. The colors of entities are composed of the cognitive motivation for naming of foreign objects instead of original expressions.
Three examples above do not correspond to foreign words in structure and form, even in the way of expression of word meaning—'butter,' 'penicillin' and 'doctor’s coat'—and the words are replaced by Chinese color-words. The replacement is not semantic translation from the concrete counterpart; it is purely cognitive and functional transformation of colors. Similarly, shape and size of foreign entities are also composed of the cognitive motivation for foreign-inspired Chinese terms. For example, the word jinzita 金字塔 (gold, character-shaped, tower [pyramid]) is motivated by the shape of the entity ‘pyramid’. The external form of character jin 金 (gold) resembles the contour of ‘pyramid’. This is a visual motivation for foreign-inspired Chinese terms. Other sensory-perceptions such as haptic, (relating to the sense of touch), auditory, odorous, flavours and vestibular senses may also form a motivation of word production for foreign-inspired Chinese terms. Examples of this kind of words will be discussed in chapter 6.

2. metaphorical mapping:

orientational:

(1) shangdi 上帝 (high, emperor [God])

(2) fuyin 辅音 (auxiliary, sound [consonant])

(3) dongyangche 东洋车 (east, foreign, vehicle [rickshaw])

(4) zuolun shouqiang 左轮手枪 (left, wheel, hand, gun [revolver])

(5) shangyi yuan 上议院 (up, discussion, court [House of Lords])
These examples, representing different types of metaphor, are constructed metaphorically in modern Chinese. Each reflects one method and motivation of metaphorical production. Metaphorical production denotes a method of word coinage and relates to some foreign-inspired Chinese terms that are formed of figurative components in modern Chinese. As mentioned above, there are some types of metaphor which are classified from different perspectives in contemporary theory of metaphor. Metaphors are one of the methods of word coinage in language, as shown in numerous languages. Grady (1999) referred to metaphors as resemblance metaphors based on perceived resemblance. Lakoff and Johnson (1980) proposed that there are three types of metaphors: orientational, ontological and structural in terms of conceptual domains. However this thesis concentrates on three types of metaphors: orientational, image and conceptual in terms of metaphorical production.
foreign-inspired Chinese terms. Detailed discussion on these three types of metaphorical production is in Chapter 7.

Most foreign-inspired Chinese terms are modeled semantically by ‘distinctive properties + generic name’

The semantic model ‘distinctive properties + generic name’ of foreign-inspired Chinese terms is formulated on the basis of Chinese scholarship (Li Yuming, 1999; Ye Wenxi, 1996; Li Jinxia, 2003; Dong Xiufan, 2004, Packard, 2006). In the foreign-inspired Chinese terms model, ‘distinctive properties + generic name’, the part ‘generic name’ formed of the second element in the compound words represents a category of an entity or a concept. The category denotes the location of entities or concepts which are classified by people. In other words, people put an entity into a category in terms of understanding the content and nature of entities or concepts. Generally, the words which represent the category of an entity or concept are situated at the generic level of the vocabulary. The part ‘distinctive properties’ formed of the first element in the compound words represents prominent, salient and typical features of an entity or concept. To be exact, the prominent, salient and typical features denote distinguished, outstanding and representative characteristic properties, which derive from an entity or concept. That is to say, the entity or concept which exhibits some properties stimulates the people’s inspiration for the word production. In short, people put an entity into a category first, the distinctive property then is best to distinguish the entity from other members in the same category.

This semantic foreign-inspired Chinese term model can account for collected
words in the list. Consider the following examples:

(1) *daishu* 袋鼠 (pouch, rodent [kangaroo])

(2) *qingrenjie* 情人节 (lover, festival [St Valentine’s Day])

(3) *banma* 斑马 (striped, horse [zebra])

In these three examples, the characters *shu* 鼠 (rodent), *jie* 节 (festival) and *ma* 马 (horse) representing a ‘generic name’ in the model are considered as the category of the entity. Chinese native speakers first identify these entities as different categories—kangaroo, Saint Valentine’s Day, zebra—are included in three categories of rodent, festival and horse. Then native speakers select from the properties of entities and determine one in order to distinguish from other members within the same category. The process of selection of properties of course reflects human cognition and perception of entities or concepts. Thus, the characters *dai* 袋 (pouch), *qingren* 情人 (lover), and *ban* 斑 (striped) represent the prominent and typical properties of ‘kangaroo’, ‘zebra’, and ‘Saint Valentine’s Day’ respectively. These representations form the distinctive properties in the compound word in terms of the foreign-inspired Chinese terms semantic model.

Four assumptions above are concerned with the theme—foreign-inspired Chinese terms. It is assumed that foreign-inspired Chinese terms and other categories of Chinese borrowings exist together in Chinese, and the four categories are cognitively motivated in sound, form and meaning of foreign words, particularly foreign-inspired
Chinese terms, in shape, size, color or concepts of foreign entities. Also, it is assumed that foreign-inspired Chinese terms are produced by different cognitive and functional properties of foreign entities. Finally, almost all foreign-inspired Chinese terms accord with a model of Chinese words, and the category of words appears indigenous at first glance. This observation underlies the approach of this thesis to the study of foreign-inspired Chinese terms.

3.4 Methods of Data Collection

Data collection refers to obtaining the information which needs to answer the research questions. To realize this purpose, our study uses the methods of observation and secondary data collection. Observation is defined as ‘the unobtrusive watching of behavioral patterns of people in certain situations to obtain information about the phenomenon of interest’ (Johnson & Christensen, 2000: 147). Observation is an important way of collecting information about people, because people do not always do what they say they do. Secondary data collection is a major method in our research. Secondary data are data originally collected or recorded at an earlier time, usually by a different person or researcher, for a different purpose than the research problem at hand (Johnson & Christensen, 2000: 152). Secondary data can include any kind of information, such as official documents, personal documents, etc.

3.4.1 Observation
Observation is the best way to obtain primary data, meaning collected data originally. In the research, the author takes the position of observer-as-participant. Chinese linguistic phenomena are observed from the point of view of a native speaker. As stated in the introduction to this study, the research field of Chinese language is limited in duration from the early 19th century to the present. We call the language of this period of time modern Chinese, and this is the language that was observed. Modern Chinese as the object of our study may be characterised as follows:

(1) united writing system (both simplified and traditional characters)

(2) spoken language (Putonghua or Guoyu [National official language])

(3) different dialects but the same writing system

(4) more than 1.3 billion speakers as the first language than any other language

(5) used widely in mainland China, Taiwan, Hong Kong, Macao, and Chinese communities outside China

These characteristic features of modern Chinese can serve as the basis of observation for investigators. However, our investigation is concerned with written or spoken Chinese by people of different age, background and circumstances. In terms of judgments of Chinese sound, shape and meaning, we need to select the loanwords used by them in everyday life, whatever phonic loans, semantic loans, or other kind of words that derived from foreign languages. We then select the foreign-inspired
Chinese terms (FICT) among the words we read and hear anywhere. According to sound, shape and meaning of Chinese borrowings, the criteria of our selection are as follows:

(1) representing foreign entities or concepts

(2) no corresponding to foreign sounds, forms and meanings in most words

(3) possible partial indigenous meanings and partial foreign meanings

(4) popular use in Chinese native speakers

(5) possible coexistence of phonic or semantic loans

According to these criteria, we have selected about 150 foreign-inspired Chinese terms in everyday life, which are used in supermarkets, press and communication. Here it is necessary to note that some of them exist in different Chinese dictionaries (Chinese Academy of Social Sciences, 2001; Luo Zhufeng, 1989) or handbooks (Xiong Zhongwu, 1992; Song Ziran, 2004), others have been not taken in linguistic references. Illustrate the five criteria above with following examples:

(1) **diannao** 电脑 (electric, brain [computer])

(2) **ganlanqiu** 橄榄球 (olive-ball [rugby])

(3) **huaqishen** 花旗参 (colorful, flag, ginseng [American ginseng])

(4) **gouzaidui** 狗仔队 (doggie, team [paparazzo])
These four examples which coincide with the selecting criteria above for foreign-inspired Chinese terms derive from foreign entities or concepts, occurring in foreign countries, such as the United States of America ‘computer’, ‘America ginseng’; England ‘rugby’ and Italy ‘paparazzo’. These terms are produced as foreign-inspired Chinese terms which do not correspond to the originals in sound, form and meaning of the words. That is to say, this kind of Chinese terms does not transliterate phonetically or translate semantically from sounds or meanings of foreign words. Of course, any forms of foreign words such as letters, structure do not occur in this kind of Chinese terms. The word ganlanqiu 橄榄球 (olive, ball [rugby]) is an exception: the paraphrase for ‘rugby’ contains an element of Chinese meaning ‘ball’. In the term ‘American ginseng’, ‘ginseng’ is an English word borrowed from Chinese, so it is easy to identify its transformation as an indigenous meaning. The four terms follow the model of the word production when they are imported into modern Chinese and used widely in communication between native speakers, but do not cause ambiguity in communication. The word ‘computer’ can also be translated semantically into Chinese as jisuanji 计算机 (calculating machine). This is an example of coexistence of semantic loan and foreign-inspired Chinese terms. In addition to the selection criteria, there are three steps for selecting foreign-inspired Chinese terms in the process of observation:

(1) checking the foreign meanings in original references

(2) examining Chinese meanings in relevant references
determining whether a term is the foreign-inspired Chinese terms

These three steps are crucial to identify foreign-inspired Chinese terms. Otherwise, it is easy to mix semantic loans with foreign-inspired Chinese terms. For instance, the word ‘alloy’, which means ‘mixture of two or more metals’, is adapted into Chinese as *hejin* 合金 (join, gold). The literal meaning of two languages (*alloy* in English/join + gold in Chinese) does not correspond in terms of the selecting criteria, and this seems to be a foreign-inspired Chinese term according to the model of word production. However, the explanation of the original meaning is close to the Chinese meaning, and after checking and examining references to word meanings in modern Chinese, the Chinese meaning is to be judged as a semantic translation from its foreign meaning. This example shows the procedure of observation, reflecting the criteria and other relevant steps for collecting data of foreign-inspired Chinese terms.

3. 4. 2 Secondary Data

Secondary data, as discussed above, relate to data originally collected at an earlier time by a different person for a different purpose (Johnson & Christensen, 2000). In this study, data are secondary data, taken from a reference entitled *An Etymological Glossary of Selected Modern Chinese Words* published in 2002 (CLSHK). This glossary collected 5,725 neologisms selected from 300 works published in the 19th and 20th centuries. According to the selecting criteria discussed
in the section 3.4.1, about 800 examples for foreign-inspired Chinese terms are taken from this glossary. As stated earlier in relation to method of observation mentioned above, data collection in the study is word selection, that is to say, it is a selection for foreign-inspired Chinese terms. Phonic loans and loan blends in Chinese differ from indigenous words in sound and meaning. As we have introduced in chapter 2, phonic loans are transliterated phonetically from foreign sounds of words, the Chinese morphemes represent only foreign phonic level and it is similar to foreign sounds in hearing. Loan blend containing foreign sounds or meanings is a mixture in foreign and indigenous sounds or meanings in a word. As in phonic loans, the part of foreign sounds derives from original words, and as in semantic loans, the part of foreign meanings originates from literal meaning in foreign languages. Clearly, these two kinds of words which do not coincide with the selecting criteria above in section 3.4.1 are excluded from the field of our selection from the perspective of research theme. However, the problem is how to distinguish semantic loans from foreign-inspired Chinese terms, because these two categories originating from common etymologies are similar in sound, form and meaning of words after the importation into Chinese. Thus, the criteria of selecting foreign-inspired Chinese terms are actually determined by the distinction of semantic loans and foreign-inspired Chinese terms. Semantic loans are composed of two types of methods in reproduction of foreign words as follows:

(1) semantic structure of foreign words
semantic paraphrase of foreign word meanings

Semantic structure refers to Chinese semantic loans that the foreign word structure is imitated and the foreign word meaning is translated, whereas semantic paraphrase is defined as Chinese semantic loans that are translated from explanation of original words. The Chinese words derived from foreign structures and meanings are easily to be judged by native speakers as in *regou* 热狗 (hot dog); *biming* 笔名 (pen name), which correspond to original structures and meanings, for example, the Chinese ‘*re*’热 (hot) is equal to the English ‘hot’; the morpheme ‘*gou*’狗 (dog) is the same as in the English ‘dog’, and even the Chinese structure is copied from the original ‘hot + dog’ (*regou* 热狗 hot + dog). Now it is problem that those Chinese words that are transferred from paraphrases of foreign words as in *baoxian* 保险 (protect, danger [insurance]); *fengrenyuan* 疯人院 (mad, person, court/house [lunatic asylum]). These two words remain in semantic explanations of foreign words, only change in the form which reverses foreign letters with Chinese characters. In other words, this kind of words is paraphrased semantically from explanations of foreign counterparts and does not imitate the word structure of foreign languages.

Compared with Chinese semantic and phonic loans such as *biming* 笔名 (pen name) and *disike* 迪斯科 (disco), foreign-inspired Chinese terms are characterized as follows:

1. some foreign-inspired Chinese terms exist in only one form but lost phonic loans
(2) neither semantic or phonic loans for foreign-inspired Chinese terms ever occur in modern Chinese

These two points are concerned with the criteria of selecting foreign-inspired Chinese terms and can be viewed as a complement to the selecting criteria proposed in the section 3.4.1. Let us explain these points in turn:

With the first point, a form of phonic loans has existed in modern Chinese when it was first imported into China, then this phonic form has been lost. In other words, it stops being used among native speakers but can be found in special references of Chinese language. For example, the English word ‘giraffe’ was transliterated into Chinese as six different forms of phonic loans: zhiliehu 支列胡, jilafet 吉拉斐, jilafu 吉拉夫, zhilafu 知拉夫, jilafu 即拉夫, zhierlafu 支而拉夫 (CLSHK, 2002). In spite of these six forms, it was replaced by a foreign-inspired Chinese term changjinglu 长颈鹿 (long, neck, deer [giraffe]). That is, the Chinese native speakers stop using different forms of phonic loans from the English word ‘giraffe’ after the emergence of the foreign-inspired Chinese term changjinglu 长颈鹿 (long, neck, deer [giraffe]). Therefore, the term changjinglu 长颈鹿 (giraffe) exists in modern Chinese, but the phonic loan has been lost in everyday life of the native speakers.

The second point of the feature as a complement of the selecting criteria for FICT denotes direct production of foreign-inspired Chinese terms from foreign entities or concepts without a semantic or phonic form of loans. To be exact, the Chinese native speakers do not reproduce by foreign sounds or meaning of original words, but this
kind of words is produced from a completely different perspective. For example, the word *changhao* 长号 (long, brass-wind instrument [trombone]) is motivated by its shape (CLSHK, 2002), while the terms ‘heart’ and ‘spade’ in paying cards are transferred into the concept *hongtao* 红念 (red, peach), *heitao* 黑桃 (black, peach) which are motivated by shape-color of foreign entities (Zhang Xuezeng, 1995).

In summary, data collection as word selection for foreign-inspired Chinese terms in this study follows the selecting criteria proposed in this section, which can be applied to all examples of foreign-inspired Chinese terms obtained by the methods of observation and secondary data. In addition, there are three steps for judgment of indigenous words and foreign-inspired Chinese terms: 1. checking the foreign meanings in original references; 2. examining Chinese meanings in relevant references; and 3. determining whether a term is the foreign-inspired Chinese terms. Also, it is easy to confuse semantic loans with foreign-inspired Chinese terms. For the sake of clarification, two characteristic features may be summarised for identifying foreign-inspired Chinese terms: 1. some foreign-inspired Chinese terms exist as only one form but have lost phonic loans; 2. either semantic or phonic loans for foreign-inspired Chinese terms never occur in modern Chinese. These methods divide the scope of collecting words and may be used to test all examples of foreign-inspired Chinese terms in this study.

3. 5 Methods of Data Analysis
This study adopts the method of qualitative data analysis, which is research relying primarily on the collection of qualitative data, i.e. non-numerical data such as words. This method is ‘much more eclectic and there is no “one” or “right” way of analyzing the data because of the nature of the qualitative data collected’ (Johnson & Christenson, 2000: 55). As stated earlier, the cognitive semantics approach is employed for analysis of the data collection with human perceptive and cognitive experiences. About a thousand foreign-inspired Chinese terms have been collected using the methods of observation and secondary data discussed above. As mentioned in introductory chapter, the collected thousand foreign-inspired Chinese terms are listed in the appendix of the study. In data analysis, first of all, foreign-inspired Chinese terms are identified by the theory of categorization, which involves the comprehension of some individual entity, and some particular of experience. As a result, foreign-inspired Chinese terms are considered as a kind of Chinese borrowings, namely the peripheral borrowings in Chinese by the theory of categorization. The motivation of foreign-inspired Chinese terms is then analyzed with sensory-perception and cognition, and it is proposed that there is a semantic model of word production for foreign-inspired Chinese terms on the basis of the semantic structure of modern Chinese. According to the property of word production for foreign-inspired Chinese terms, all most foreign-inspired Chinese terms are divided into three categories: sensory, spatial and functional. Based on these categories, we analyze sensory-perceptual and functional word-production with human senses of vision, hearing, touching, taste smell and motor movement, i.e. embodied experience,
as well as metaphorical word-production for foreign-inspired Chinese terms with principles of image schemas and conceptual metaphor. Now illustrate the method of analysis in more detail.

3. 5. 1 Categorization

Data analysis of categorization is concerned with three aspects: (1) identifying foreign-inspired Chinese terms as a particular category of Chinese borrowings, that is, peripheral borrowings; (2) categorizing all collected data as three types: sensory-perceptual, spatial and functional; and (3) analyzing the category attributes of foreign-inspired Chinese terms. Detailed illustration of data analysis of categorization displays below:

As discussed in assumptions, the theory of categorization can redefine the categories of Chinese borrowings. The theory of categorization refers to one of the most basic human cognitive activities that involve the comprehension of some individual entity and some particular of experience. Following this theory, common and particular attributes of foreign entities or concepts represented by Chinese borrowings need to be found. According to the rule of a word that has the sound, form and meaning in Chinese word-production, the sound, form and meaning constitute basic attributes of Chinese borrowings. Of course, foreign etymology, foreign concepts or culture, word structure and trace of history of communication with other nations include also in attributes of the category in Chinese borrowings. Comparing
these attributes, it was found that foreign-inspired Chinese terms and the other three established types of borrowings (phonic, semantic loans, loan blends) have a cluster of common attributes in foreign concepts (meaning), foreign etymology and foreign culture. These three common attributes have equal status as borrowings within the category; they share common attributes (foreign concept, foreign etymology and foreign culture) with each other, and bear a family resemblance to each other. Therefore, a family resemblance of membership can be a category, at the same time a type of entities and its containing can be another category. Also, based on foreign sounds and word structure of Chinese borrowings, phonic loans and loan blends are more typical than semantic loans and foreign-inspired Chinese terms. Foreign sounds or word structure designated by Chinese words originate from foreign words or structure. From this point of view, the more foreign sounds a Chinese word has, the more representative or central it is. Thus, phonic loans and loan blends have more foreign sounds than semantic loans and foreign-inspired Chinese terms. The former two types are considered as typical borrowings, while the latter two are peripheral ones. As a result, the examples of foreign-inspired Chinese terms collected are qualified as a type of Chinese borrowings and exist individually as borrowings in modern Chinese.

About a thousand foreign-inspired Chinese terms that are collected and selected by methods of observation and secondary data can be categorized as three types: sensory-perceptual, spatial, and functional in terms of motivations of word production. The concrete benchmark of categorization is to distinguish the prominence of word
meaning of foreign-inspired Chinese terms as compound words, that is, to determine the motivation of word production. Therefore, sensory-perceptual category contains the motivation of foreign-inspired Chinese terms that are made of human senses: visual, hearing, touching, taste, smell and motor movement. In the process of analysis, all relevant elements of human perception are under examination in terms of the word meaning, such as color, shape, shape-color, shape-size, temperature, soft-hard, wet-dry, sounds, taste, smell etc. Spatial category comprises three kinds of entities: physical, orientational and temporal, which are motivations of word production for foreign-inspired Chinese terms. The clear contour and three-dimensional space of an entity are the categorization benchmark for the three kinds of terms. It is noted that temporal entities do not have those conditions such as clear contour and three-dimensional space of an entity, but it is treated as physical entities because of analyzing time in terms of space. Functional category is also concerned with motivation of word production, in which the function is prominent of word meaning.

Analyzing foreign-inspired Chinese terms as a category of Chinese borrowings, the theory of categorization is employed also to explain the semantic model of foreign-inspired Chinese terms, which is composed of ‘distinctive properties + generic name’. A foreign-inspired Chinese term as a compound word, generally, consists of two parts: first element representing ‘distinctive properties’ and second element expressing ‘generic name’ of entities or concepts. ‘Distinctive properties’ and ‘generic name’ can be analyzed by the theory of categorization. Let us illustrate it with examples:
(1) *banma* 斑马 (spot, horse [zebra])

(2) *banlu* 斑驴 (spot, donkey [zebra])

(3) *huama* 花马 (variegated, horse [zebra])

(4) *hualu* 花驴 (variegated, donkey [zebra])

(5) *huashou* 花兽 (variegated, animal/beast [zebra])

(6) *huatiaoma* 花条马 (variegated, striped, horse [zebra])

(7) *fulu* 福鹿 (happiness, deer [zebra])

The seven examples above mean ‘zebra’ in modern Chinese. In the process of analysis, at first, we list all attributes of the entities concerned ‘animal’, ‘horse’, ‘donkey’, and ‘deer’. Then we carefully compare attributes of these entities one by one; we find out the common and particular attributes of all entities in terms of principles of categorization. Finally, the morpheme *ma* 马 (horse) as the second element of the model and the morpheme *ban* 斑 (spot) as the first element of the model for the term *banma* 斑马 (spot, horse [zebra]) have respectively more common attributes than others and they are confirmed as a typical. In other words, the entity ‘horse’ has more common attributes than other entities such as ‘animal’, ‘donkey’, and ‘deer’ within a category and it is close exactly to the entity ‘zebra’ in the category. Similarly, the property ‘spot’ in the entity ‘zebra’ is prominent in comparison with other entities such as ‘variegated’ and ‘happiness’.
3. 5. 2 Embodied Experiences

Embodied experience relates to human sensory-perceptual experience. In the process of data analysis, it is found that some foreign-inspired Chinese terms are produced directly by human senses such as vision, touch, hearing, smell, taste and motor movement. According to these embodied experiences, the relevant FICT are categorized as six groups: visual, haptic, auditory, odorous, flavors and vestibular.

Consider the following examples:

Visual:

(1) color—huangyou 黄油 (yellow, oil/grease [butter])

(2) shape—renzini 人字呢 (man, character-like, woolen cloth [herringbone])

(3) shape-color—huaqiguo 花旗国 (color-pattern, flag, country ['the United States'])

Haptic:

(1) wet or dry—binggan 饼干 (round flat cake, dried food [biscuit])

(2) soft—ruanmusai 软木塞 (soft, wood, stuff [cork])

(3) hot—pain—huojiu 火酒 (fire, alcohol [alcohol])

Auditory:

(1) shouyinji 收音机 (receiving, sound, machine [radio])

(2) liushengji 留声机 (remain, voice, machine [gramophone])

Odorous:
biyan 鼻烟 (nose, smoke [snuff])

Flavors:

xiangcai 香菜 (fragrant, vegetable [coriander])

Vestibular:

yaobaiwu 摇摆舞 (swing, dance [disco])

In the discussion, the theory of embodied experience (Lakoff & Johnson 1999; Evans & Green, 2006) is applied to the analysis of the motivation of foreign-inspired Chinese terms with respect to human senses. The examples in group ‘visual’ above are motivated by human visual perception of foreign entities appeared color, shape, and shape-color, which form the basis of word production for foreign-inspired Chinese terms. Other examples in group ‘haptic’ are produced by human senses such as wet-dry, soft-hard, and hot in touching, which motivates the word production of foreign-inspired Chinese terms. Similarly, the groups ‘auditory’, ‘odorous’, ‘flavors’ and ‘vestibular’ are involved in human senses of hearing, smell, taste and motor movement, which constitute a motivation of word production for foreign-inspired Chinese terms. At the same time, the functional aspects of some foreign-inspired Chinese terms are analysed, because the function as a motivation of word production is inseparable from sensory-perceptual motivation. Sometimes, functional characteristics are more prominent than sensory-perception in motivation of word production. Therefore, functional foreign-inspired Chinese terms are discussed together with words constructed out of sensory-perceptual motivation. For example,
the English word ‘stopwatch’ is produced by Chinese native speakers as three terms: mabiao 马表 (horse, timepiece); paobiao 跑表 (running, timepiece) and miaobiao 秒表 (second, timepiece). These three words can serve for many purposes such as: horse racing, sport competition, and scientific research. Clearly, the functional motivation of this kind of terms is prominent in word production.

3. 5. 3 Image Schemas

Image schemas derive from sensory and perceptual experience as we interact with and move about in the world. Image schemas can be a basic tool of analyzing foreign-inspired Chinese terms produced by conceptual metaphor. As explained earlier in the cognitive semantics approach, image schemas are very basic conceptual elements which contribute to the construal of more complex conceptual structures. Metaphors can be explained by notion of image schemas. For example, the words shangyiyuan 上议院 (up, discussion, court [House of Lords]) and xiayiyuan 下脚踏 (down, discussion, court [House of Commons]) utilise image schema ‘up-down’.

Neike 内科 (internal, section [терпия {therapy}]) and waike 外科 (external, section [surgery]) are produced by image schema ‘container’; fuyin 辅音 (auxiliary, sound [consonant]) and yuanyin 元音 (fundamental, sound [vowel]) originate from notion of image schema ‘centre-periphery’; gaoshepao 高射炮 (high, shoot, gun [antiaircraft gun]), and tianzhu 天主 (the sky, master [God]) can be analyzed by different image schemas, such as ‘up-down’, ‘front-back’, ‘link’, ‘container’,
‘source-path-goal’, ‘center-periphery’ etc, because these words contain spatial concepts and can structure experience of space.

3. 5. 4 Mapping

Mapping connects entities in one conceptual region with another (Evans & Green, 2006: 367). Some metaphorical foreign-inspired Chinese terms may be analyzed by mapping principle of conceptual theory of metaphor proposed by Lakoff and Johnson (1980, 1999). The conceptual theory of metaphor is to reveal metaphorical mappings between source and target domains. In the process of data analysis, two kinds of words were found that can be explained by metaphorical mappings. That is, methods of word production for some foreign-inspired Chinese terms are involved with image and conceptual mappings between source and target domains. Image mappings derive from the physical resemblance, whereas conceptual mappings are based on the association of two domains at conceptual level. Consider the following examples:

Group 1:

(1) yanjingshe 眼镜蛇 (glasses, snake [cobra])

(2) xuehuagao 雪花膏 (snowflake, paste [vanishing cream])

(3) malingshu 马铃薯 (horse-bell, yam/potato [potato])

Group 2:
(1) *maoyan* 猫眼 (cat, eye [peephole])

(2) *xingqi* 星期 (star, period [week])

(3) *jiaohuang* 教皇 (religion/church, emperor [Pope])

Three examples in the first group are analyzed by shape, shape-color and shape-size of entities in terms of principle of resemblance mappings. In other words, similar shape, shape-color and shape-size map one image onto one other image. The examples exhibit respectively mappings on shape — *yanjingshe* 眼镜蛇 (glasses, snake [cobra]); shape-color — *xuehuagao* 雪花膏 (snowflake, paste [vanishing cream]) and shape-size — *malingshu* 马铃薯 (horse-bell, yam/potato [potato]).

The second group of examples above reflects conceptual mappings between two domains, and displays three types: 1/ full metaphors, denoting that all components of whole words in Chinese are made of a figurative way as in word *maoyan* 猫眼 (cat, eye [peephole]); 2/ partial metaphors in first element, referring to that the distinctive properties (first element) in the model of foreign-inspired Chinese terms are a figurative way as in word *xingqi* 星期 (star, period [week]); 3/ partial metaphors in second element, relating to some words in which the second element (generic name) of the model for foreign-inspired Chinese terms is produced in a figurative way as in the word *jiaohuang* 教皇 (religion/church, emperor [Pope]).

As we have demonstrated, we apply some available methods to analysis of data collected for this study. The theory of categorization can help us to analyzing different kind of Chinese borrowings and identifying a category of foreign-inspired Chinese
terms. This theory may also explain two parts of compound words within the semantic model of foreign-inspired Chinese terms that can help us to recognize the rule of word production. The principle of embodied experience is a way to reveal a method of word coinage in modern Chinese, and some foreign-inspired Chinese terms are directly produced by human sensory-perceptions. Image schemas and mapping are methods to understand some complex concepts of word production, and provide guidance in recognizing methods of conceptual metaphor in Chinese.

In this chapter, the cognitive semantics approach to investigate foreign-inspired Chinese terms was introduced. The development and major principles of cognitive semantics have been briefly demonstrated. Four assumptions for this study were then stated. These assumptions concern crucial problems in the field of Chinese language, particular in Chinese borrowings. Next data serving for the study were collected. We employ two main methods to collect and select foreign-inspired Chinese terms: the method of observation and secondary data. Five points plus three steps and two features are used to collect and select foreign-inspired Chinese terms from everyday life and from a dictionary. Finally, methods of data analysis were displayed. The theories and principles of cognitive semantics such as categorization, embodied experience, image schemas, and mapping are used to analyze and organize foreign-inspired Chinese terms, and the procedure of analysis shows that these theories and principles fit this study.
Chapter Four
Categorization of Chinese Borrowings

4.1 Introduction

Following the research methodology shown in Chapter 3, this chapter will examine the categorization of Chinese borrowings using prototype theory. Prototype theory is concerned with the nature and structure of categorisation. Evans and Green (2006) believe that categorization both relies on and gives rise to concepts. The human conceptual system focuses on categorization as the ability to identify perceived similarities and differences between entities and thus group them together. For Evans and Green, categorisation is central to the conceptual system. It partly accounts for the organisation of concepts within the network of encyclopedic knowledge. This chapter first introduces linguistic and conceptual categories in order to clarify basic concepts between language and entities, and review the development and principles of prototype theory. Following on from this it then discusses the categorisation of Chinese borrowings with main prototypical principles, considering typicality, fuzziness, abstraction, prototype structure, prototype effects and encyclopedic view. It is believed that the discussion of categorisation enable to investigate common attributes and particular properties, and to identify a particular
category within Chinese borrowings. In addition, the prototypical structure and basic levels in Chinese borrowings are explored, particularly foreign-inspired Chinese terms.

4. 2 Conceptual and Linguistic Categories

It is important to clarify two categories, conceptual and linguistic. To take the conceptual category first, the notion of concept may be understood as ‘a person’s idea of what something in the world is like’ (Dirven & Verspoor, 2004: 13). This implies that the meaning associated with a linguistic symbol is linked to a particular mental representation. Concepts can relate to single entities such as the concept ‘bachelor’ or they can relate to a whole set of entities, such as the concept ‘fruit’. Concepts have their structure, in which concrete entities—apples, pears, grapes and so on—are contained.

Such concepts that put reality into certain units are a category. Accordingly, conceptual categories are concepts of a set as a whole. Concepts enable entities to be assigned to appropriate categories. Conceptual categories are classes of entities in the world, like ‘dog, chair, and apple’. They represent the way experience of the world is explained to make it manageable, by division into classes whose members have similar properties. Whenever something is perceived, there is an automatic tendency to categorise it. For example, it may be asserted that when Chinese native speakers hear Chinese word, they automatically categorise it as native Chinese vocabulary, as a
borrowed word or as a kind of hybrid. Inevitably the activity of categorisation is involved with human experience of perception, knowledge and attitude.

Conceptual categories which exist in a language are linguistic categories, or, linguistic signs. Dirven and Verspoor (2004) see any linguistic sign as having a form and a meaning. These two vocabulary elements are equivalent to a concept. A meaning relates to some entity in the world of experience, because ‘a more comprehensive view of language as a system of signs must also include the human “conceptualiser” and the world as it is experienced by him’ (Dirven & Verspoor, 2004: 14). The interlinking of the human conceptualiser, conceptual categories and linguistic signs are shown as in Table 4.1.

Table 4.1 Model of the Conceptual World:

Based on Dirven and Verspoor (2004)
Thus a conceptual category is represented by a linguistic sign which consists of a form and a meaning; furthermore, this sign is mainly based on a human conceptualiser with experience of the world. The meaning depends on an entity in the world of experience. This model of the conceptual and linguistic worlds also accommodates a possibility that people may categorise the same entity in different way, and the same person may even do so at different times (Dirven & Verspoor, 2004: 14). For example some Chinese native speakers may call ‘God’ shangdi 上帝 (Lord on High [God]), while Chinese Catholics will say tianzhu 天主 (Lord of Heaven [God]) and others may simply say zhu 主 (Lord). There is also the term jiushizhu 救世主 (save, world, master [God]) (CLSHK, 2002: 221; 255; 139). In addition, Chinese native speakers may like to represent a foreign term with indigenous characters: thus the phonic loanword pannixilin 盘尼西林 (washbasin, Buddhist nun, west, forest [penicillin]) which originates from English word ‘penicillin’ is replaced by the inspired word qingmeisu 青霉素 (green, mould, element [penicillin]). The choice between various borrowings which derive from the same original brings in different linguistic type within a category of phonic loans and foreign-inspired Chinese terms.

The conceptual category relates to Chinese borrowings which are derived from concepts of foreign words and are located at the generic and subordinate levels of vocabulary. In addition, foreign-inspired Chinese terms, which are differently produced, are connected closely with the concepts and categories of Chinese words. The definition of linguistic concept and category differs in linguistics. For traditional
linguistics, the concept of word is formed from the morpheme, and the vocabulary is
defined as part of speech — noun, verb, adjective and so on. The meaning of a word
can be analysed into synonym, antonym, superordinate, hyponym. The structure of
words and relationship between words are explained within the scope of language.
Formerly linguistic theory had the meaning of words as clear-cut, and the standing
meaning is equal at all. But for cognitive semantics the concept is a part of mind
based on the word meaning. The arrangement and regularity of vocabulary are
highlighted by the cognitive semantics approach. The internal system of vocabulary is
based on human experience and on knowing the regularity of objects. Cognitive
semantics is concerned with the ordinary matters of knowing the object and knowing
the different standing and function of vocabulary.

The formation of concepts relying on linguistic signs is based on cognitive
categories. Language in this scenario is an auxiliary instrument, a means of
expression to know the world. In the process of knowing, the human brain does not
accept objects one by one. It accepts them category by category. When it comes to a
concrete context, the word as referent is directly related to the concept of words:
concepts are the foundation of word meaning, and words are the concrete
manifestation of concepts in language. So a word reflects a phenomenon in the world
through a concept; the concept represents, in the human mind, the general and natural
attributes of world objects. Abstract concepts are also formed out of a foundation of
abstraction, and these are marked by words.

Category and concept are equivalent in a broad sense. Category is a term used
widely in cognitive semantics. It refers to classifications in cognition, while *concept* relates to the semantic scope of expressions produced by the category. The two terms are not always clearly distinguished in current cognitive semantics literature, and different terminology may represent researcher preference.

Rosch (1973, 1975, 1978) employed the terms ‘prototype category’ and ‘categorisation’ in a series of experiments in the 1970s. In her view concept is represented mainly by prototype, that is the best example: people understand a concept through an example that best illustrates it. For Rosch, the concept consisted of two elements: prototype or the best example; and degrees of category membership. The prototype is the archetypal member of the object category, while other membership has different degrees of typicality. Jackendoff (1983) regarded the conceptual structure as a bridge between linguistic information and psychological information included in human feelings about the world. He believed that the conceptual structure is a psychological embodiment of language, and it is an intermediary level that connecting language with cognition. The semantic structure is a conceptual structure represented by language. Lakoff and Johnson (1980) discussed conceptual metaphor, and argued that metaphors are primarily a conceptual construction. Afterwards, Lakoff (1987) used the terminology ‘cognitive semantics’ and analyzed the concept and meaning with cognitive semantics theory. He summarised many image schemas that derived from human experiences (see below in detail). For Lakoff, the image schema is one of four cognitive models which include propositional, metaphorical and metonymical models. Langacker (2002) holds that
human perceptual experience is a reappearance of the objective world in mind, obtained from human real experience. The conceptual world of human beings is constructed from this. For Langacker, cognitive functioning is largely autonomous and the ideal world is constructed by its regularity. The mental imagery of the concrete object is directly from perceptual experiences, while the mental imagery of abstract objects is synthesised on the basis of the concrete object. It goes without saying that the conceptual world differs from the real world.

It is fair to say that in traditional linguistics category was an assembly of the defined, clear-cut objective properties shared by all members of the category. As far as cognitive semantics is concerned, however, most categories centre on prototype, and structure radiates connections that may be compared to family resemblances. From the point of view of cognitive semantics, category membership does not completely derive from objective reality. It relates only to understanding and cognitive structure, such as gestalt schema, imagery and metaphor. Thus category is based on the human cognitive structure; and it does not correspond directly to the external world.

Conceptual categories underlie statements on Chinese borrowings. However conceptual categorisation needs fuller exposition. Experientialism is a cognitive view that can elucidate the term. Experientialism is not the same thing as empiricism. As well as category structure and image schemas, the experiential experience refers to the structure of the human body and its rhythms of mutual movement with the external world. Human cognitive structure then relates to the experience of the human
body, and the direct concepts, basic categories and image schemas are arranged and built up on the basis of experiences from perception, motor movement, substance and society. The indirect concept originating from indirect experience uses the mental model of metaphor and metonymy. It goes beyond literal mirroring or representation of external world. In short the abstractive concept comes from the imagination.

According to classical theory on categorisation, conceptual and linguistic categories have definitional structure. Each concept is associated with a definition. Everything that satisfies the definition is included in the conceptual category and anything that cannot satisfy the definition is excluded. Definitions typically take the form of a set of features or criteria, which are individually necessary for membership of the category and collectively sufficient. These are the ‘necessary and sufficient’ conditions for category membership.

The definitional problem and the problem of conceptual fuzziness and prototypicality in the classical theory of categorisation (Evans & Green, 2004) have increasingly come under attack in recent decades (Stanlaw, 2004) and have been a major drawback in the development of the classical theory. This has been a key motivating factor for the development of other theories (Croft & Cruse, 2004).

4.3 Prototype Theory

Because of problems with definitions and with necessary and sufficient conditions, various theories of categorisation have been proposed. One influential
theory has been proposed by cognitive psychologist Eleanor Rosch and her colleagues (Rosch 1973, 1975; Rosch & Mervis 1975; Rosch et al. 1976). In a theory about the nature and structure of categorisation, they have proposed the notion of prototypes. Prototype theory, closely associated with experimental research in cognitive psychology, centres on representation of an ideal example, or prototype. As summarised by Dirven and Verspoor (2004), members of a category tend to have different status: some are prototypical members, others are more peripheral members. The further one gets away from the centre of a category to its periphery, the more the category tends to become fuzzy (p.21).

To document the Rosch prototypical phenomenon in relation to Chinese borrowings, it is necessary to list all attributes of phonic loans, loan blends, semantic loans and foreign-inspired Chinese terms that are distinguished by Chinese linguistic components such as sound, form and meaning of morphemes. Cultural factors also have a place in the list of attributes.

1. phonic loans (e.g. *gali* 咖喱 curry):
   a) foreign sound
   b) foreign meaning
   c) native form of characters/native culture
   d) foreign etymology
   e) foreign concepts/culture
   f) trace of history of communication with other nations
2. loan blends:

(1) foreign sound + semantic translation (e.g. *jipuche* 吉普车 jeep car)

   a) foreign sound
   b) indigenous sound → semantic translation
   c) foreign meaning
   d) native form of characters/native culture
   e) compound word structure
   f) foreign etymology
   g) foreign concepts/culture
   h) trace of history of communication with other nations

(2) foreign sound plus native generic identification (e.g. *kache* 卡车 car)

   a) foreign sound
   b) foreign meaning
   c) native generic identification/name
   d) native form of characters/native culture
   e) compound word structure
   f) foreign etymology
   g) foreign concepts/culture
   h) trace of history of communication with other nations

(3) foreign sound mixing up native word meaning (e.g. *wutuobang* 乌托邦 utopia)

   a) foreign sound
b) foreign sound regarding word meaning

c) foreign meaning

d) native form of characters/native culture

e) compound word structure

f) foreign etymology

g) foreign concepts/culture

h) trace of history of communication with other nations

(4) foreign letter plus semantic translation (e.g. ouchingxue O 型血 O blood type)

a) foreign sound

b) indigenous sound → semantic translation

c) foreign letter

d) foreign meaning

e) native form of characters/native culture

f) compound word structure

g) foreign etymology

h) foreign concepts/culture

i) trace of history of communication with other nations

3. semantic loans (e.g. zuqiu 足球 football):

a) indigenous sound

b) foreign meaning

c) native form of characters/native culture
d) word structure (the same as original)

e) foreign etymology

f) foreign concepts/culture

g) trace of history of communication with other nations

4. foreign-inspired Chinese terms:

(1) indigenous word structure (e.g. *banma* 斑马 zebra)

a) indigenous sound

b) foreign meaning

c) native form of characters/native culture

d) word structure (the same as native)

e) foreign etymology

f) foreign concepts/culture

g) trace of history of communication with other nations

(2) indigenous production + semantic translation (e.g. *haowai* 外 newspaper extra)

a) indigenous sound

b) foreign meaning

c) native form of Chinese characters/native culture

d) word structure (the same as original)

e) foreign etymology

f) foreign concepts/culture

g) trace of history of communication with other nations
(3) indigenous word structure (e.g. yangcong 洋葱 onion)

a) indigenous sound

b) foreign meaning

c) native form of characters/native culture

d) word structure (the same as native)

e) foreign etymology

f) foreign concepts/culture

g) trace of history of communication with other nations

To explain the terminology used above, *phonic loans* refer to a kind of borrowing made from foreign sounds, which consists of transliteration, pronunciation and phonetic notation. *Transliteration* means phonetic imitations of foreign letters with sounds of Chinese characters without indigenous literal meanings. The imitation is close to the pronunciation of the original. For example, the English word ‘senator’ is converted into sounds of characters as *xinaduo* 西那多. *Pronunciation* denotes transformation from articulations of foreign words by means of Chinese characters without indigenous literal meanings. For example, the word ‘Newcastle’ is actually transliterated as *niukasier* 纽卡斯尔, but it becomes *niukasu* 纽卡牌. Phonetic notations refer to phonological transformations of foreign words with characters without indigenous literal meanings. The term ‘foreign etymology’ denotes that the motivation of Chinese borrowings derives from foreign languages. Common attributes then are foreign etymology, foreign culture, history of communication and
native culture.

Now certain attributes form certain categories (Rosch, 1977). For Chinese native speakers, it is three types of sounds in Chinese borrowings that establish membership and particular degree of membership in a prototype structure: foreign; indigenous; and a combination of foreign plus indigenous (Wu Chuanfei, 1999).

4.3.1 Principles of Categorization

The principles of cognitive economy and perceived world structure may guide the formation of categories in the mind (Evans & Green, 2006). The principle of cognitive economy states that an organism attempts to gain as much information as possible about its environment while minimising cognitive effort and resources. Category formation derives from this cost-benefit balance. Apart from storing separate information about individual stimuli experienced, people can group similar stimuli into categories. The principle of perceived world structure is another aspect of categorisation. People draw on the correlational structure of the surrounding world to form and organise categories. The two basic principles of prototype theory, the principles of cognitive economy and perceived world structure, contribute to the human categorisation system.

Natural categories are a product of the human perceptual and cognitive apparatus for dealing with the world (Rosch & Mervis, 1975). Objects are perceived in terms of attributes, and these attributes come in clusters. If an object is a Chinese loan word,
no doubt it will have pronunciation, meaning and form. Whether a phonic or semantic loan from another language, it will have attributes; and attributes that go together, like pronunciation, form and meaning, define a natural category, and the objects within a single category share attributes with each other and so have a kind of relationship to each other. At the same time they share few attributes with objects in other categories and have little resemblance to other objects (Clark & Clark, 1977). Natural categories are formed by the clustering of perceived attributes. The more typical an object is judged to be, the more attributes it shares with members of the same category, and the fewer attributes it shared with members of other categories. The human perceptual apparatus is geared to deal with certain attributes, and in nature those attributes go to form certain categories (Rosch, 1977).

Rosch (1977) and others (Rosch & Mervis, 1975) have observed that categories have an internal structure in hierarchies. Apple, plum, cherry, watermelon, sugarcane and coconut, for example, are all equally fruit. But intuitively they do not belong to a category of fruit; some are more typical of the category than others. Apples and cherries are typical of fruit but sugarcane and coconuts will never be selected as typical fruit. These are all fruit but apples and cherries are more fruit than sugarcane and coconuts. So fruit can be arranged according to how typical of the category fruit they are. The more typical a category member is, the more easily it could replace the category name (Rosch, 1977). Put another way, the more typical the member, the more similar it is to the prototype of the category (Clark & Clark, 1977).
4. 3. 2 Typicality of Categories of Chinese Borrowings

According to the principles of categorisation, let us examine the Chinese borrowings from English and Russian, dividing by us as follows:

(1) phonic loan:

*yinqing* 引擎 (engine)

(2) loan blends:

a. *yintewang* 因特网 (internet)

b. *pijiù* 啤酒 (beer)

c. *aiksguang* X 光 (X-ray)

(3) semantic loans:

*mali* 马力 (horse power)

(4) foreign inspired Chinese terms:

*bayinhe* 八音盒 (eight, sound, box [music box])

The above four classifications may form a category of borrowings in terms of their characteristic features; the six examples above have a cluster of common attributes, foreign concepts (meaning); foreign etymology; and foreign culture. These three common attributes have equal status as borrowings within the category. The six examples share common attributes with each other, and bear a ‘family resemblance’ to each other. *Family resemblance* is used in the sense ‘members of a category may
be related to one another without all members having any properties in common that
define the category^ (Lakoff, 1987: 12). In terms of family relationship, all six
examples should belong to the category of Chinese borrowings. However according
to appearance they would not belong to that category. Based on foreign sounds or
word structure of Chinese borrowings, type 1/ and 2/ are more typical of a borrowing
than 3/ and 4/. Type 1/ is also more typical than 2/. But type 3/ and 4/ would never
become a typical member of a loanword category with respect to foreign sounds.
Therefore, phonic loans and loan blends can be viewed as prototype borrowings,
while semantic loans and foreign inspired Chinese terms are regarded as
non-prototypes.

4. 3. 3 Fuzziness of Categories of Chinese Borrowings

The boundaries of many everyday conceptual categories are not well-defined, with a
lack of clear diagnostic criteria for membership. Chinese native speakers may readily
accept borderline cases, but they may find it difficult to accept intuitively that the four
kinds of borrowings may combine to form a very large category of Chinese borrowed
terms. This relates to appearance and form in borrowings. Now prototype theory
allows for borderline uncertainty or fuzziness, so that an entity in the world might
bear some resemblance to two different prototypes. For example, the two terms
kangbaiyin 康拜因 (комбайн — combine [harvester]) and lianhe shougeji 联合收割
机 (комбайн — combine [harvester]) are respectively a phonic loan and a
semantic loan for Chinese native speakers, with common English factors. These two foreign loanwords have common attributes of foreign meanings, etymology and culture, but are differentiated by typicality. They are differentiated merely by typicality. Phonic loans can be viewed as typical borrowings, because their pronunciation sounds foreign; semantic loans have fuzzy boundaries. Fuzziness is shown by subjective uncertainty on the part of speakers about whether certain entities belong to the category or not; by disagreement between speakers over membership; and by different judgments by given speakers on different occasions and in different contexts (Cruse, 2006).

4. 3. 4 Abstraction of Chinese Borrowings

The central prototype is an abstraction. This abstraction might be a set of characteristic features, to which we compare real entities (Saeed, 2003). In prototype theory, the best member or example is the central one which is called the prototypical member or most prominent member of a category. The abstraction is the central prototype that first comes to our mind when we think of that category (Dirven & Verspoor, 2004). Chinese native speakers tend to agree more readily on central or typical members than on less central members. Chinese phonic loans are the central prototype among the four types discussed above. Characteristic features of phonic loans *yingqing 引擎* (engine), *bulaji 布拉吉* (тре [dress]), *suda 苏打* (soda) may be foreign sounds where we hear or listen to like sounds, meanings (concepts)
from foreign culture where we recognise like meanings, etymology where we observe like derivations, and non-indigenous word structures which we feel like structures. These characteristic features are embodied in the phonic loan and perceived by Chinese native speakers, and if asked to cite Chinese loanwords, they are most likely to say a phonic loan and not a semantic loan or foreign-inspired Chinese term. These do not have a foreign sound and are less central members of the category of borrowings, and will not be an abstraction of Chinese borrowings.

4. 3. 5 Prototype Structure of Chinese Borrowings

Rosch and Mervis (1975) investigated the prototype structure with goodness-of-example ratings, and argued that prototype structure serves to maximise shared information contained within a category. The more frequent a particular attribute is among members of a particular category, the more representative it is (Dirven & Verspoor, 2004). The prototype structure reflects the repeated attributes across distinct members. It shows that another way of assessing prototype structure is by establishing the set of attributes of a particular entity has (Rosch & Mervis, 1975).

Within the Chinese borrowing category, foreign inspired terms like gangqin 钢琴 (piano), baoxincai 包心菜 (cabbage), and bayinhe 八音盒 (music box) possess particular attributes where neither a phonetic representation nor an imitation of the foreign word structure are used. Foreign-inspired Chinese terms are characterised by properties that are not directly observable. Chinese native speakers may not realise
that they are part of the category of borrowings, or may simply see them as peripheral to the concept of phonic loans.

4. 3. 6 Prototype Effects

The goodness-of-example rating of an entity within a category correlates with many different properties or prototype effects. Before discussing prototype effects in Chinese borrowings, we will take some Chinese examples:

Group 1:

kafei 咖啡 (coffee)

fanshilin 凡士林 (Vaseline)

duma 杜马 (дuma [Duma — Russian parliament])

suwei’ai 苏维埃 (Совет [Soviet])

Group 2:

(1) jipuche 吉普车 (jeep), buershiweizhui 布尔什维主义 (бolshevism)

(2) falanrong 法兰绒 (flannel), kache 卡车 (car), boershitang 博尔食汤

(3) tanke 坦克 (tank), luoji 逻辑 (logic), wutuobang 乌托邦 (utopia)

(4) ouxingxue O 型血 (O blood type), keijin K 金 (karat gold), seidiaoc 调
(the key of C [music])

Group 3:

1. zuqiu 足球 (football)
2. mali 马力 (horse power)
3. shangceng jianzhu 上层建筑 [superstructure]
4. ziwo piping 自我批评 [self-criticism]

Group 4:

1. banma 斑马 (zebra), huangyou 黄油 (butter), taowa 套娃 [Russian doll]
2. gangbi 钢笔 (pen), haowai 号外 (newspaper extra), baitie 白铁 (galvanised iron)
3. yangcong 洋葱 (onion), fanqie 番茄 (tomato), hujiao 胡椒 (pepper)

The above division into four groups relates to the notion of goodness-of-example in experimental work by Rosch and her colleagues (Rosch, 1973, 1978; Rosch & Mervis, 1975), where order and frequency of mention, family resemblance, and rapid verification are key properties in the goodness-of-example rating. Organisation of categories of Chinese borrowings is followed after frequency of mention and family resemblance (Wu Chuanfei, 1999; Wang Yin, 2005a).

The category prototype reflects a number of correlational properties, categories always display typicality effects. Not all members of a category have the same status within the category. Certain category members may be judged to be better or more
representative examples of the category than others. Members judged the best examples of a category can be considered to be category prototypes (Croft & Cruse, 2004).

With the above four groups of examples, group 1 comprises two terms from English and two from Russian, as phonic loans, that is pure sound transliteration. Group 2 has four types of borrowings forming loan blends, in which group 2a comprises sound transliteration plus semantic translation; group 2b comprises foreign sounds plus generic names added by native speakers (sound transliteration + indigenous generic name/identification); group 2c embodies foreign sound with Chinese word meanings (sound transliteration reflects indigenous meaning); group 2d has foreign alphabet/clipping + semantic translation. Group 3 shows derivation from English and Russian as semantic loans—pure semantic translation). Group 4 is composed of foreign inspired Chinese terms with three types of borrowings: group 4a are made of foreign entities or concepts (pure foreign inspired Chinese terms); group 4b comprises foreign entities or concepts and semantic translation (foreign inspiration + semantic translation); group 4c consists of fixed characters representing meanings ‘foreign’ or ‘western’ and generic names/identification (pure foreign inspired Chinese terms with fixed form).

Foreign sounds are an important criterion. In terms of phonic structure, group 1 comprises whole word transliteration; group 2, comprising loan blends, possesses a half of exotic phones on the word; semantic loans and foreign inspired Chinese terms in group 3 and group 4 have acquired native sounds. In the four groups of examples,
it is evident that phonic loans are a good example while foreign inspired Chinese terms are poor examples.

Categories not only display typicality effects, but category members also exhibit family resemblance relations. The fact that not all properties have to be satisfied means two members of a category may resemble the prototype in different ways and as a consequence may have little resemblance to one another (Cruse, 2006). For many categories there are no attributes common to all members, and this implies that not all members of a family are identical in appearance (Evans & Green, 2006). Yet there is sufficient similarity between members for a judgement to be made on resemblance. Apart from the foreign sounds on each member, there are features in common in all four groups of examples above. Foreign concepts, foreign etymology and culture suggest that they are original from other nationalities and belong to a category of borrowings. In the category of Chinese borrowings, phonic loans which exhibit a large number of attributes common to many members are named prototypical members, while loan blends, semantic loans and foreign inspired Chinese terms are less prototypical.

4. 3. 7 Encyclopedic View of Chinese Borrowings

An encyclopedic view in relation to prototype effects of borrowings refers to kinds of word meaning. Encyclopedic meaning, as opposed to dictionary meaning, is very broad. In principle it includes everything that is known about the referent of a
word (Cruse, 2006). Since the 1960s, it has been widely assumed that a distinction parallel to the dictionary/encyclopedia distinction exists at the level of the mental representation of words (Evans & Green, 2006). However it has been maintained that the distinction between dictionary knowledge (linguistic meaning) and encyclopedic knowledge (world knowledge) is artificial (Evans & Green, 2006). In other words, a dictionary/encyclopedic dichotomy in terms of knowledge is difficult to maintain, and there are no scientific theories or logically consistent definitions, but the idea of collections of cultural views may be useful (Saeed, 2003).

Linguistic knowledge which is specialised to language is about the meaning of a word. Encyclopedic knowledge which is external to linguistic components concerns on non-linguistic or world knowledge. Discussion of definitions of Chinese borrowings, associated with linguistic and encyclopedic knowledge, appears at first to relate terminology, but it is more an issue of categories and classifications, as Chapter 2 showed. Reasoning from this, the concept of foreign inspired Chinese terms falls under the category of borrowings. Taking some terms for the sake of discussion: xiaotiqin 小提琴 (violin), lianyiqun 连衣裙 (dress), malingshu 马铃薯 (potato). These three terms, from the linguistic perspective of Chinese pronunciation, word structure, foreign etymology, and evolution from transliteration to free translation or reproduction of neologisms, may be included in the category of vernacular vocabulary. However on the other hand, the foreign inspired Chinese term reflects foreign culture, foreign concepts (meaning), trace of communication with other nations, and adoption of native culture from the point of view of encyclopedic
knowledge. Thus it should not be excluded from the category of borrowings. Comparing the common attributes of prototype structure, the choice of foreign components in encyclopedic view determines the category of borrowings.

4. 4 Levels of Categorisation of Borrowings

Level status is a function of content and relations between contents. The variation in level construal is to be observed between speakers and within the usage of a given speaker at different times and in different contexts (Croft & Cruse, 2004). Categories can be distinguished according to level of inclusiveness (Rosch et al, 1976). Inclusiveness relates to what is subsumed within a particular category. As we have seen, categories of Chinese borrowings imply levels of classification where every category contains the function of contents, and classifications of Chinese borrowings include different content or inclusiveness. There are various opinions on the classification of Chinese loanwords in different languages, but generally speaking, discussions on categories or classifications employed other approaches than prototype theory, and so their conclusions led to diversity. Semantic loans were even excluded from the category of borrowings. Furthermore foreign inspired Chinese terms were ignored, or eliminated from the investigation of categories of Chinese borrowings.

Under our observation and investigation, the category ‘phonic loans’ is more inclusive than the category ‘loan blends’ because it includes entities like ‘semantic loans’ and ‘foreign inspired Chinese terms’. ‘Semantic loans’ in turn are more
inclusive than ‘foreign inspired Chinese terms.’ The category ‘foreign inspired Chinese terms,’ containing just examples of this category, represents the least inclusive level of this category. It will be useful at this point to consider the views of Rosch and her colleagues that there is a level of inclusiveness that is optimal for Chinese native speakers in terms of the principle of cognitive economy. The level of inclusiveness is at the middle of the level of detail between the most inclusive and least inclusive levels. Consider the levels of inclusiveness of categories in detail as follows:

1. linguistic level:
   a) transliteration, translation, reproduction, production (methods)
   b) phonetic or phonic (sounds)
   c) word formation (structure)
   d) etymology (source)
   e) meaning

2. cultural level:
   a) foreignism
   b) native
   c) history of communication

The two levels of content or inclusiveness—conditions of appearance and potential of borrowings—may be applied to phonic loans, loan blends, semantic loans, and
foreign inspired Chinese terms. Category content is seen as internal in terms of linguistic level, while non-linguistic encyclopedic knowledge is external and indicates the cultural level. The linguistic and cultural levels overlap in function.

Phonic loans relate to the sound level reflecting transliteration, pronunciation and phonetic notation. For example, the words mater 模特儿 (model)—transliteration; bai bai 拜拜 (bye-bye)—pronunciation; misite 密斯特 (Mister)—phonetic notation. Semantic loans relate to the translation of word meaning and meaning explanation, for instance, jisuanji 计算机 (computer); dianshi 电视 (television); mali 马力 (horsepower). Loan blends are complex and difficult to define precisely, but fall generally into four types. A. either foreign elements or native components within the structure of a loanword (pijiu 啤酒 [beer] — sound plus generic name); B. both phonic and semantic borrowing from an entire foreign word (yintewang 因特网 [internet] — part foreign sound plus part foreign meaning); C. the foreign term is divided in two parts — phonic loan plus original (tixu T恤 [T-shirt]; vitaming bi 维他命 B [vitamin B]); D. the foreign word is in two parts — semantic loan plus original letter (aikesi guang X 光 [X ray]; shibakai jin 18 K 金 [18 karat gold]).

Transplanted loans refer to shape and meaning levels borrowed directly from original languages, with change in the sound level: for example weiseidi VCD (VCD); diweidi DVD (DVD). Such words, which tend to be unstable in modern Chinese, are not considered in this study.

Foreign inspired Chinese terms relate to foreign etymology and concepts. From the perspective of translation, they are similar to semantic loans, but something like
free translation. Apart from ‘cue validity’ (Rosch, 1977: 19), foreign inspired terms may be like words that are not borrowed at all, but resemble indigenous words in sound, form and meaning of characters, for example, the words xiangjiaoren (ethnic Chinese born overseas with white attitudes); guilao (foreigner, Westerner), guimei (female foreigner, Westerner). Indigenous and foreign elements may be distinguished in loan words, for instance, zixingche (bicycle); yingcun (inch); yanglazi (foreign glass) (Fu Huaiqing, 1985: 180); zhentouqian (needle nose pliers). The word zixingche (bicycle), composed of three characters, is produced by purely indigenous components, while the foreign sounds ying (standing for English/England) and lazi (glass) play a part in yingcun (inch) and yanglazi (foreign glass). The term zhentouqian (needle nose pliers) is a semantic loan, with tou (head) used instead of the English nose in describing the pliers.

Foreign and native culture overlap and are embodied in various borrowings. Borrowings with foreign cultural connotations are called culturally-loaded words, such as gulage (Гулаг—Main Administration for Corrective Labor Camps)); fushideshide (Faustian); gongkaixing (гласность [glasnost]); maiban (comprador). These terms may have historical, political, literary and economic properties reflecting strong foreign cultural elements. Less culturally-loaded words, such as benke (regular college course/undergraduate course), dazi (type), gangbi (pen)—these are foreign inspired terms that represent educational and cultural properties.
Apart from common attributes, such as foreign etymology, foreign culture, history of communication, and native culture, the sound of the category has three levels: foreign; indigenous; and combination of foreign plus indigenous (Wu Chuanfei, 1999). According to Rosch (1977), certain attributes tend to form corresponding categories. Three levels of sounds in Chinese borrowings form different degrees of membership in a particular category. For Chinese native speakers, degree of membership in prototype structure is determined by the sound of borrowed words: the phonic loan on the level of foreign sounds is the most typical and clear example, and it has the most foreign attributes within the category. This typicality makes the prototype, which is at the center in the category. The second level of sound—foreign sound plus indigenous sound—is located at mid-level of the category. Indigenous sound, at the third level of sound and at a distance from the center, is atypical and unclear, has the least foreign attributes in the category: non-prototype borrowing and an atypical membership.

4.5 Basic Categories of Borrowings

In cognitive semantics there are three levels of vocabulary category: basic, superordinate and subordinate categories. The vocabulary category relates to the given structure and level of words. Basic level terms are typically monolexemic. They can be contrasted with terms for subordinate level categories which often comprise two or more lexemes. An example is *chair* — basic level object; *rocking chair* —
subordinate level object. Basic level terms occur more frequently in language use than superordinate or subordinate level expressions (Evans & Verspoor, 2006), and Rosch (1978) has suggested that basic level terms may have emerged prior to superordinate-level and subordinate-level terms in the process of language evolution. The superordinate is induction based on the basic category; it needs thinking at a higher and more abstract level. The subordinate should have a higher and more complex cognitive ability. Brown (1958) observes that if an object has different names in different category levels, this may mean superior status in particular cases. A process may take place starting from the basic level. Obvious physical distinction is followed by naming, mastering and remembering objects in the level, and finally the use of memorable names for an object, with high frequency occurrence. The basic level category is a primary psychological level of objects subject to human classification. Human interaction with circumstance connects the cognitive structure and objective world at this level.

4. 5. 1 Basic Category Vocabulary

The basic level category is a typical category in human cognition. The prototype category works best in the basic level category. Basic category with prototype property is a forceful instrument of world objects that have been subject to human categorisation. The formation of categories results in a lexical category, determines the order of production and development in vocabulary, and constitutes the given
structure of vocabulary levels. The superordinate and subordinate vocabularies probably appear later than vocabulary of the basic category.

Most basic category lexemes are native words with simple forms, short syllables and without segmental phonemes. A basic category object is a holistic complex that people interact within. Most subordinate words originate from basic category vocabulary; some of them are compounds joining two basic category words of. Most borrowings in Chinese appear to be included in the subordinate vocabulary.

According to Clark & Clark (1977), the plant kingdom is divided into categories, each of which is given a name. These categories containing borrowings are hierarchically organised with six (and sometimes five) levels:

1. unique beginner: zhiwu 植物 plant
2. life form: hua 花 flower, cao 草 grass
3. generic name: yanciao 烟草 tobacco
4. specific name: shuiyan 水烟 shredded tobacco for water pipes; hanyan
5. varietal name: biyan 鼻烟 snuff; xiangyan 香烟 cigarette; xuejiayan 雪茄烟 cigar
6. complex name: yeziyan 叶子烟 dried tobacco leaves; luisongyan 吕宋烟 Luzon cigar; yantu 烟土 crude opium; zhiyan 纸烟 cigarette; yanjuanr 烟卷儿 cigarette; juanyan 卷烟 cigarette; yantou 烟头 cigarette end, stump; yandi 烟蒂 cigarette stub, butt; yangao 烟膏 prepared opium paste
Each category belongs to a category at the next higher level of abstraction. Levels 1 and 2 highlight the attributes common to the whole membership. Generally speaking, terms in these categories should not have been borrowed from other languages, and the object is expressed by the native vocabulary alone. Terms *zhìwu* 植物 (plant), *hua* 花 (flower), *cao* 草 (grass) belong to the basic vocabulary in Chinese. The third level term *yáncao* 烟草 (tobacco) is a foreign inspired Chinese term; it was introduced as a phonic loan *danbagu* 淡巴菰 (tobacco) (Liu Zhengtan et al., 1984: 74-75) into China during Ming dynasty (1368-1644). The word ‘tobacco’ (originally from Spanish ‘tabaco’ [Guoyuribao, 1981: 148]) occurs one after another in Chinese as the different phonic forms: *danpōgū* 淡婆古; *danbagu* 淡巴菰; *danbuguí* 担不归; *maguyān* 孖菰烟 (Liu et al., 1984: 74). The basic term *yáncao* 烟草 (tobacco) substitutes for the four variants. At the first three levels, the categories are mutually exclusive; the individual object at each level of the three categories would not belong to a holistic complex but would be perceived individually.

Levels 4, 5 and 6 may be classified more flexibly in different way. Terms in these categories are composed of native components and borrowed lexemes. Among them, terms *shuīyán* 水烟 (shredded tobacco for water pipes); *hányān* 旱烟 (tobacco for long-stemmed pipes); *yèziyān* 叶子烟 (dried tobacco leaves). However, other terms of the categories seem to be incorporated into the borrowings with cognitive prominences (see chapter 5, 6). On the surface it is difficult to distinguish the borrowed and inherent words. However phonic and semantic loans that were translated or transliterated are dominant in categories. It is obvious that the words
xuejia 雪茄 (cigar); yapian 鸦片 (opium); xuejiayan 雪茄烟 (cigar) and liusongyan 吕宋烟 (Luzon cigar) transliterate a foreignism. The word yangao 烟膏 is created by native speakers for ‘prepared opium paste’. As for the words biyan 鼻烟 (snuff), xiangyan 香烟 (cigarette), yantu 烟土 (crude opium), zhiyan 纸烟 (cigarette), yanjuanr 烟卷儿 (cigarette) and juanyan 卷烟 (cigar, cigarette), as well as yantou 烟头 (cigarette end, stump), yandi 烟蒂 (cigarette stub, butt), these are broadly foreign inspired Chinese terms. They are produced by the sensory-perceptual experience, such as taste, shape, functional and conceptual transformations (see chapter 6).

The above demonstration, with the analysis of Clark & Clark (1977), the generic level, level 3, is the most basic. It is more useful than level 2 and better developed than level 4. It is distinguished from levels 4, 5 and 6 linguistically. In Chinese the life form level uses single characters like hua 花 (flower) and cao 草 (grass), whereas other levels use compound words composed of two or three characters. In Chinese the generic level is a complex name or a foreign inspired Chinese term. Levels 3-6 must belong to a more complex classification system, in which divisions are not as natural or as easy to identify. The life form level, level 2, with its simple names, represents a relatively natural way of dividing up the world. Chinese feeling for life form names to be primary may be seen in that these names are the first ones learned by children (Berlin, 1972; Berlin, Breedlove & Raven, 1968, 1973). Names in other levels are more complex formulations or even borrowed words, which later may be hard to analyse. It is also difficult to distinguish inherent and borrowed words
among the names of the different categories, although the basic or generic level, which refers to level of distinctness, has a special status and importance (Rosch, 1976). In other words, basic level categories have particular psychological and communicative significance, and there is resemblance between members. In addition to the basic level, superordinate and subordinate levels indicate neighboring categories of the basic level. Superordinate categories contain 2, 3 levels of life form and unique beginner are less good categories than basic level categories, because although members are relatively distinct from members of neighboring categories, resemblance within the category is relatively low. Subordinate categories (4, 5, 6 levels are not as good as basic level categories, because although members have high mutual resemblance, they have low distinctiveness from members of neighboring categories. The superordinate level highlights the functional attributes of the categories, and has a collective function (Unger & Schmid, 1996). Subordinate categories perform a specificity function.

This chapter outlined the classical theory of categorisation, which assumes necessary and sufficient conditions, and discussed in some detail prototype theory, the model of categorisation derived from the work of cognitive psychologist Eleanor Rosch and her colleagues. The present study demonstrates that many categories of Chinese borrowings have prototype structure and prototype effects rather than definitional structure. Typicality, fuzziness, abstraction and an encyclopedic view of Chinese borrowings were examined with prototype theory. Conceptual and linguistic
categories were identified in relation to knowledge representation and lexical meaning, particularly concerning Chinese borrowings. It was argued that categories for every member should have common and distinct attributes at the level of content. Finally the study examined concrete objects that are most informative at the basic level.
Chapter Five
Motivation and A Semantic Model of
Foreign-inspired Chinese Terms

5.1 Introduction

Having discussed the categorization of Chinese borrowings in the previous chapter, we turn to examine the motivation of Chinese borrowings and the semantic model of foreign-inspired Chinese terms (FICT) in the present chapter. The issue of motivation, a core issue in this study, emphasises the production of Chinese borrowings, and relates to phonic loans, semantic loans, loan blends and foreign-inspired Chinese terms. This thesis argues that all Chinese borrowings are motivated when they are imported into Chinese. The motivation of foreign-inspired Chinese terms in this peripheral area of borrowings may be seen in terms of linguistic regularity, or a semantic model based on prototype theory.

In this chapter, section 5.2 provides an analysis of Chinese borrowing motivation concerning the sound, shape and meaning of foreign words, entities and concepts. Section 5.3 examines morphemes and the model of compound words in modern Chinese; foreign-inspired Chinese terms as borrowings are inseparable from basic elements of word production such as morphemes, simple or compound words, and
inner form of words. Section 5.4 analyses a model of compounds with examples of foreign-inspired Chinese terms. Section 5.5 provides a model of foreign-inspired Chinese terms and presents its characteristic features. In section 5.6 the model is systematically analyzed with categorization theory, in terms of ‘distinctive properties’ and ‘generic name.’ Sections 5.6.1 to 5.6.5 discuss the generic category, perceptual salience, family resemblance, distinctive properties and categories of foreign-inspired Chinese terms as issues of categorization theory.

5. 2 Motivation of Borrowings

Motivation refers to non-arbitrary links between a form and meaning of linguistic expressions (Dirven & Verspoor, 2004: 13). In terms of linguistic universals languages are divided into general and specific motivations. General motivation relates to the organization of the whole linguistic system, pertaining to different levels of linguistic sound, meaning and syntax, as well as pragmatics. Syntactic motivation, which attracted linguists, is represented by cognitive grammar (Langacker, 1987), in which human perception and conceptual schemas restrict syntactic structure and release syntactic motivation of linguistic concept and sense. Specific motivation relates to the generation, evolution and development of words, especially to certain level in production of neologism. This study mainly concerns motivation of borrowed words, particularly foreign-inspired Chinese terms (FICT).
FICT as a category of Chinese borrowings is associated with motivation of linguistic signs. The motivation of language concerns the arbitrariness of linguistic signs. An arbitrary sign is ‘one whose form bears no relation of analogy or resemblance to its referent’ (Cruse, 2006: 16). This definition gives rise to the principle of symbolicity, which refers to the conventional pairing of form and meaning of words. A typical example is provided by the words for a domestic canine in a range of languages: dog (English), собака (Russian), Hund (German), chien (French), and gou 犬 (Chinese). These all refer to the same thing, but their forms are markedly different. There is noting in the forms of these words that makes them especially suitable to express the lexical concept of ‘dog’. These words which have the same meaning may also express quite different sounds in another language. For instance, the form 犬 (dog) in Chinese, which sounds like English ‘gou,’ meaning ‘go’; the form ‘dog’ in English, which sounds like Russian ‘док’, meaning ‘dock’. There is no link between the form and meaning of linguistic signs. Ferdinand de Saussure (1916) referred to this as the arbitrary characteristic of linguistic signs. The notion of arbitrary holds true for most of the simple words of a language, seeing that meaning is given for forms by human beings. However, when we look at ‘the whole range of new words or new senses of existing words, we find that almost all of them are motivated’ (Dirven & Verspoor, 2004: 12). The new words included in borrowings are created on the basis of existing linguistic materials with certain linguistic rules, and they are meaningful to users of the language concerned.
Cognitive semanticists question the arbitrariness of language, because language is restricted by cognitive conditions (human physiological abilities) and the social environment; yet they believe that there is no arbitrariness in compound words from the perspective of linguistic universals (Dirven & Verspoor, 2004: 12-13). Although linguistic signs have certain arbitrariness at basic level vocabulary, losing their motivation, they are motivated at superordinate or subordinate level of vocabulary during the formation of compound words and word groups. ‘New words are, as a rule, built on existing linguistic material and, as such, are meaningful to us’ (Dirven & Verspoor, 2004: 13).

All borrowings are motivated when they are reproduced in Chinese. The factor of motivation is at work both in the hearer and speaker. The hearer wants to make sense of linguistic expressions, particularly borrowings. Phonic loans are transliterated from foreign sounds, such as English words ‘copy’ as kaobei 拷贝 (beat, shellfish), and ‘coffee’ kafei 咖啡 (special characters for sound borrowings) in Chinese. On the phonic level, the form of a borrowed item is determined by phonic transliteration, which is replacement of donor language sounds or phonemes by borrowing language phonemes. From the point of view of motivation, phonic loans are reproduced by foreign sounds. Characters used in sound borrowings usually only record foreign sounds and do not represent their Chinese meaning.

Semantic loans are translated from foreign meaning and structure, as lanpishu 蓝皮书 ([blue, cover, book] blue book), chuanbo 传播 ([past on, sow] diffusion, diffuse). With semantic borrowings, the choice of indigenous characters is determined
by the meaning of the foreign word. Semantic loans are used in cases where there is no indigenous word to represent a foreign entity or concept. Semantic borrowings comprise semantic loans and loan translation in word structure. From the perspective of productive motivation, the word meaning is produced by the foreign original, and there is correspondence between the donor and borrowing languages, as with bluebook/lanpishu 蓝皮书 and diffuse/chuanbo 传播.

Loan blends are mixed words which involve foreign sounds plus indigenous generic terms, or foreign sounds plus foreign meaning, or foreign meaning plus indigenous generic terms, such as jipuche 吉普车 ([lucky, universal, vehicle] jeep), daolinzhi 道林纸 ([road, forest, paper] Dowling paper/glazed printing paper), nongchang 农场 ([farming/agriculture, place] farm). These borrowings contain foreign components in the form, sound and meaning of vocabulary. In some other words, all types of loan blends are formed of one the foreign components: neither sounds or meanings in borrowed words, as in jipuche 吉普车 ([lucky, universal, vehicle] jeep) — sound borrowing (jipu 吉普 for ‘jeep’) + indigenous generic terms (che 车 for ‘vehicle’); daolinzhi 道林纸 ([road, forest, paper] Dowling paper) — sound borrowing (daolin 道林 for ‘Dowling’) + semantic translation (zhi 纸 for ‘paper’); nongchang 农场 ([farming/agriculture, place] farm) — semantic translation (nong 农 for ‘farm’) + indigenous generic terms (chang 场 for ‘place’).

Similarly, foreign-inspired Chinese terms (FICT) in Chinese borrowings may also be as phonic loans, semantic loans, and loan blends motivated in terms of perspectives of the cognitive semantics approach. It is noted that Chinese borrowings are located at
both levels of superordinate and subordinate vocabulary, but the most borrowed words are at subordinate level. From the point of structure of compounds and phrases, most of the complex forms of a language are motivated or transparent. For instance, the Chinese word *bayinhe 八音盒* ([eight, sound, box] music box), derived from the English phrase ‘music box’, is produced by the number of old Chinese music instruments, as follows. The newly coined word *bayinhe 八音盒* ([eight, sound, box] music box) was formed by analogy to the existing word *bayin 八音* (eight, sound) in old Chinese. The compounding sign *bayin 八音* (eight, sound) consists of two simple characters, *ba 八* (eight) and *yin 音* (sound), which are a transparent meaning. The original meaning of *bayin 八音* (eight, sound) is ‘eight kinds of ancient instrument made of following materials: jin 金 (metal), shi 石 (stone), si 丝 (silk), zhu 竹 (bamboo), pao 雍 (calabash), tu 土 (tile), ge 革 (leather), mu 木 (wood)’ (Li Jinxi, 1957: 2) in traditional Chinese music. This meaning was extended to refer to the music part of ‘a case containing a mechanism that reproduces melodies’, and by analogy, the musical sound playing in the mechanism was called *bayin 八音* (eight, sound). The word *bayin 八音* (eight, sound) is still a symbolic sign in that there is only a conventionalized connection between the form and its meaning, but it is not arbitrary, since the extension of its meaning is motivated. In other words, the English word ‘music’ is transferred by eight Chinese instruments representing ‘the sweet sound’ in Chinese borrowings. The meaning of *he 盒* (box), referring to the enclosure of ‘mechanism’ and being ‘a case’ in the English phrase ‘music box’, however, is only a literal translation corresponding to original word
structure and meaning, and a generic term, which is restricted within the structure of word production in modern Chinese (see detailed discussion in 5.4 and 5.5 below).

Certainly, the word *bayinhe* 八音盒 (music box) fills the gap of lexical items in Chinese and is situated at the level of subordinate vocabulary of toys.

Another example of foreign-inspired Chinese terms is that the human cognitive way is prominent from the angle of word production in different languages. For example, the word ‘train’, which means ‘line of railway vehicles’ in the English and Russian languages, is named by property of entities, which appears to be visual prominence of ‘a continuous line of coupled railway cars’ (Marckwardt, 1976). Unlike English motivation, the Chinese name *huoche* 火车 (train), meaning ‘fire’ and ‘vehicle’, is from the angle of motive power. The reason is that the wheels of the vehicle are pulled by ‘fire’ (Masini, 1993:179), and perceived by Chinese native speakers. In the process of production, the fire from coal is prominent in the power system of the train, because the phenomenon of ‘fire’ seems to be seen directly. Although ‘fire’ is located at the first step in the power system of the train and its real power is steam, which is hidden within the machine apparatus and can not be seen and is not perceptible, Chinese native speakers have chosen *huoche* 火车 (fire, vehicle [train]) to name the foreign entity according to the principle of cognitive prominence. The productive motivation of the Chinese term *huoche* 火车 (fire, vehicle [train]), therefore, is formed in terms of the property of entities. From the point of the motivation for the term ‘train’, there is a focal adjustment of attention in word production. Under the focal adjustments a scene can vary in selection,
perspective and abstraction (Evans & Green, 2006: 537), thus, the motivation of word production in different languages brings out diversity.

As discussed above, Chinese borrowings are reproduced with the foreign component of original words in different ways. Phonic loans, semantic loans and loan blends are motivated by foreign sound, foreign meaning and combination of both foreign and indigenous elements, respectively (see chapter 4). This is clearly a simple and basic motivation for production of borrowed words. By contrast, FICT are motivated by different prominent features of entities. In this sense, different features are selected to name entities by people, as features occur in the word ‘train’ in English and Chinese respectively. This is a potential and deep motivation for word production. From the perspective of Chinese language, it may be asked why people perceive it and name it like that? To answer this question, it is necessary to examine the composition of FICT.

5. 3 Morpheme and Model of Compounds

Morphemes, the smallest meaningful elements in language, are building elements used to form composite words or grammatical units, and an analysis of compound words requires the concept of morphemes, while compound words are motivated according to cognitive semantics. Morphemes are connected with word production in Chinese, and they are productive material for compound words. A FICT consists of two or more meaningful elements, which will be morphemes. In this sense, FICT
should be included in general Chinese compound words.

5. 3. 1 Indigenous and Foreign Morphemes

A morpheme is defined as the lowest linguistic unit, the smallest unit that combines the sound and sense, and the most stable linguistic element that can be organized, derived and operated (Cruse, 2006; Su Xinchun, 2003). Lexical morphemes—also called lexemes—are distinguished from grammatical morphemes. Also, there is a distinction of free morphemes and bound morphemes both in English and Chinese. According to their origin, in modern Chinese there are two types of morphemes: indigenous and foreign. Indigenous morphemes refer to non-borrowed elements of sound and sense in traditional language. The foreign morpheme on the other hand relates to non-inherent elements of sound and sense. The majority of morphemes inherited from Chinese before the 19th century—old Chinese—while there are some that are borrowed from foreign languages in modern and contemporary times, after the 19th century. The morphemes inherited from old Chinese are a monosyllabic, but the morpheme borrowed from foreignism is disyllabic or polysyllabic. For example, the monosyllabic words gou 狗 (dog), and shou 手 (hand) belong to multi-indigenous morphemes. The disyllabic word kaobi 拷贝 (copy) and polysyllabic bulaji 布拉吉 (dress) count as foreign morphemes. It is an exception that the binome in indigenous morphemes and monosyllable in foreign morphemes have been used in small numbers in modern Chinese for more than 200
years (Su Xinchun, 2003): the binome morphemes putao 葡萄 (grape) and hama 蛙 (frog) occurred in traditional Chinese, while the monosyllabic morphemes ba 巴 (bus) and ao 奥 (Olympic) which were extracted from loan blends xiaoba 小巴 (small, bus), zhongba 中巴 (middle, bus), daba 大巴 (big, bus) and axiao 奥校 (Olympic school), aoyunhui 奥运代 (the Olympic Games) are clipping or acronyms of the English words ‘bus’ and ‘Olympic’.

According to the existing form of morphemes, in the phonetic system the Chinese morpheme is represented by the syllable, while in the written system it is the character. In other words, a monosyllabic morpheme is written as a character: che 车 (vehicle), cai 菜 (vegetable), shui 水 (water); disyllabic or more morphemes are two or more characters (Hu Yushu, 1979), such as yinqing 引擎 (engine), suwei’ai 苏维埃 (Совет [Soviet]), aisijimoren 爱斯基摩人 (Eskimo). Most morphemes are monosyllables, and only a small number are polysyllabic. Monosyllabic morphemes make up 97.8 percent of 11,000 simple words in modern Chinese (Su Xinchun, 2003: 550). With regard to productive possibilities, a monosyllabic morpheme can form many new words with other morphemes. The small number of polysyllabic morphemes in modern Chinese does not have productive possibilities or limit in the composition of words, except with combinations of morphemes representing the sense of generic terms (Xing Fuyi, 1993: 208).

5.3.2 Simple Words and Compounds
In modern Chinese the main types of vocabulary comprise simple words and compounds. Simple words are monosyllabic and polysyllabic words, with a Chinese character representing each morpheme. A monosyllabic simple word represented by a single character is a meaningful element as it is either an independent semantic unit or a morpheme. For example, *shou* 手 (hand) as a part of the body is an independent word. However *shou* 手 (hand) in the compound *shougongyi* 手工艺 (handicraft) functions as a morpheme of composition.

The polysyllabic simple words which represented by two characters or more are also a meaningful element. Generally, this kind of word originated from the indigenous binome and the foreignism to serve as a lexical morpheme or a constitutive component. For example the disyllabic binome *putao* 葡萄 (grape), representing a fruit, is an independent word, and can form a compound *putaojiu* 葡萄酒 (grape wine) as a lexical morpheme. The trisyllabic word *suwei’ai* 苏维埃 (Совет [Soviet]), meaning the elected council at various levels of government in USSR, has one complete meaning, and this trisyllabic phonic loan cannot be separated as a lexical morpheme. Both disyllabic binome and polysyllabic simple words are inseparable in semantic form. Therefore, indigenous binome and phonic loans which are represented by two characters or more are considered as a morpheme and a constitutive component in modern Chinese. However, a monosyllabic morpheme can be extracted from polysyllable phonic loans, loan blends and disyllabic binome (Song Zuoyan, 2006; Su Xinchun, 2003). An example is *mo* 模 (clipping of model), originating from Chinese phonic loan *mote* 模特 (model), can
form other compound words. Among the fourteen such words that may be formed are: *mingmo* 名模 (famous model), *chaomo* 超模 (super model) (Song Zuoyan, 2006: 145). From *ba* 吧 (bar), short for the Chinese loan blend *jiuba* 酒吧 (wine bar), 213 words: have been formed, like *batai* 吧台 (bar table), *banü* 吧女 (bar girl) and so on. (Song Zuoyan, 2006: 141-142; Su Xinchun, 2003: 553). In addition to these examples of foreignisms, there are some morphemes that come from indigenous binomes, such as *chan* 蟾 (standing for toad) from *chanchu* 蟾蜍 (toad) and *die* 蝶 (standing for butterfly) from *hudie* 蝴蝶 (butterfly), as in new compounds: *changong* 蟾宫 (Toad Palace—the moon), *chansu* 蟾酥 (toad-cake); *diyong* 蝶泳 (butterfly stroke), *caidie* 彩蝶 (coloured butterfly) etc. (Song Zuoyan, 2006: 140). It is noted that the monosyllabic morpheme derived from phonic loans, loan blends and indigenous binome functions as a recording sound rather than meaning if it is separated; however its semantization is extracted from foreignism and an indigenous binome (Song Zuoyan, 2006: 138-139; Su Xinchun, 2003: 557).

After looking at simple words and analyzing the simple word as a morpheme, we will examine how compounds are at work in Chinese language. Compounds refer to polysyllable words in which each syllable is an element representing a meaning. As in other languages, the main ways of building composite words are known as compounding and derivation. A compound consists of two morphemes or more, whereas a derivation consists of a free morpheme and a bound morpheme. Free morphemes denote that simple words can occur on their own and thus are independent morphemes. In contrast, bound morphemes relate to that affixes cannot
occur on their own and are therefore used to build derivations (Dirven & Verspoor, 2004). Nearly all the examples in this study are compound words. This implies that derivation is not a typical pattern of word production, it is only peripheral (Dong Xiufang, 2004: 33-41). Thus the main objective should relate to compounds. The process of compounding in Chinese will now be examined, methods of production of FICT are basically the same as for general composite words.

There are two types of compound words in Chinese language: simple and complex compounds. Simple compounds consist of two free morphemes. As in English, compounds have very strict patterning. The first element in the compound has main stress, but it is generally the second element that determines the compound’s new word class (Dirven & Verspoor, 2004). Thus in baitie 白铁 (white, iron [galvanized iron]) the second element tie 铁 (iron) is a noun and the compound as a whole remains a noun. The complex compounds refer to three-, four- and longer compounds consisting of more than three free morphemes. For example, in juanxincai 卷心菜 (cabbage) there are two constituents such as juanxin 卷心 (rolling up, heart [state of cabbage]) as a novel creation which is a combination consisting of verb and noun, and cai 菜 (vegetable [generic name for cabbage]) as a generic name which is also a noun, thus the compound as a whole is a noun. The word jieqiu ganlan 结球甘蓝 (cabbage) is an academic term which is represented by four morphemes of a complex compound. In the Chinese compound jieqiu ganlan 结球甘蓝 (cabbage) there are two binary constitutive components, e.g. jieqiu 结球 (knotting, ball [cabbage]) and ganlan 甘蓝 (sweet, blue [cabbage]), consisting of a
verb and a noun; an adjective and a noun, respectively. This compound as a whole belongs to the lexical category of noun, because *lan* (blue) in Chinese also denotes ‘indigo plant’ which is at the superordinate level of vocabulary and represents *huayecai* 花椰菜 (cauliflower), * pielan* 菜蓝 (kohlrabi) and so on.

Usually, an element determining the new word class is the head of compound words in modern Chinese. The head of a compound belongs to one of the three major word classes: noun, verb, or adjective. There are two main types of the headedness of compound words: endocentric and exocentric. An endocentric compound denotes a compound that has a canonical head ‘defined as a function of the form class of the word’ (Packard, 2006: 194), whereas an exocentric compound relates to a compound that has a virtual but not canonical head. The virtual head is ‘a word constituent whose form class identity matches that of the gestalt word, a notion that is closer to the traditional definition of head as understood from syntax’ (Packard, 2006: 194-195). According to Packard (2006), there is a headedness principle of compound words: bisyllabic or more syllabic ‘noun words have nominal constituents on the right and verb words have verbal constituents on the left’ (p. 39). Following this principle, we look at the compound words mentioned above. In the simple compound, the word *baitie* 白铁 (white, iron [galvanized iron]) consists of two free morphemes. In this compound the first element *bai* 白 (white) denoting the colour of the substance is an adjective. It seems to be a modifier and is no relevant with the head of compound words in the sense. The second element *tie* 铁 (iron) denoting the substance is a noun and it seems to be head of the compound without modifying something. Thus
the compound as whole remains a noun or a bisyllabic noun word. According to the headedness principle, in the compound word *baitie 铁 (white, iron [galvanized iron])* the nominal constituent *tie 铁 (iron)* is on the right hand and the principle is testified clearly.

In the complex compound, the above example of *juanxincai 卷心菜 (cabbage)* consists of three free morphemes representing a verb *juan 卷 (rolling up)* and two nouns *xin 心 (heat), cai 菜 (vegetable)*. However, after separating the whole compound, we look at that the first two morphemes, e.g. the verb *juan 卷 (rolling up)* and the noun *xin 心 (heat)*, can form an independent semantic constituent and represent a state of the substance. This independent constituent is a verbal and the headedness of this part is on the left hand: *juanxin 卷心 (rolling up, heart)*. Similarly, the morphemes *jieqiu 结球 (knotting, ball)* in the compound word *jieqiu ganlan 结球甘蓝 (cabbage)* are also a verbal constituent on the left hand. The morphemes *jieqiu 结球 (knotting, ball)* consisting of two characters form a semantic unit. It seems to be an independent constituent after the disintegration of the compound word *jieqiu ganlan 结球甘蓝 (cabbage)*. The morpheme *jie 结 (knotting)* is a verb, but the morpheme *qiu 球 (ball)* is a noun. A verb together with a noun constitutes an independent semantic unit which appears as the headedness of left hand morpheme in the sense. These relatively independent constituents clearly show the left-headed property of the part of complex compounds. Certainly, the compounds *juanxincai 卷心菜 (cabbage)* and *jieqiu ganlan 结球甘蓝 (cabbage)* as a whole are nouns and their headedness is located on the right hand. A small number of examples of the
left-headed compound consisting of the binary morpheme is listed in the appendix of the study. We will discuss this in different paragraphs below.

5. 3. 3 Inner Form of Words

Inner form of words refers to the method of expression of word meaning. The inner form of words relates also to the motivation of words or to the etymological structure of words (Zhang Yongyan, 1982; Liu Shuxin, 1990; Wang Ailu & Si Fuzhen, 2001). Here ‘words’ in ‘inner form of words’ indicate either simple or compound words in Chinese language. The form of word meaning is internal because it distinguishes the outer sound continuum and the composite form. The inner form of words represents objective features, and it is fixed according to the initial formation of meaning (Liu Shuxin, 1990). To illustrate this notion, *shuilongtou* 水龙头 ([water] tap); *chaiyou* 柴油 (diesel oil); *dazi* 打字 (typewrite). The compound word *shuilongtou* 水龙头 ([water] tap), meaning ‘water, dragon, head’, denotes the tap of running water which is involved with the nature, function, place, material, design, shape, state of the entity. However, the Chinese word *shuilongtou* 水龙头 (water, dragon, head [tap]) only displays its two features: water and shape. In other words, this compound representing the nature and shape of the entity possesses a word meaning (water + shape) which is selected by native language speakers. The process of selection for naming the entity involves the human perception and cognition (see detailed discussion in following chapters). Thus, the selected word meaning (water +
shape) appears as an inner form of words: ‘water dragon head’ in Chinese, not tap, meaning ‘valve with handle to regulate or stop flow of fluid in pipe’ in English. Once the way of expression of word meaning is determined, it is fixed by the sound continuum ‘shuilongtou’ and composite form ‘shui 水 (water) + long 龙 (dragon) + tou 头 (head)’.

As the compound word shuilongtou 水龙头 ([water] tap), the inner form of compounds chaiyou 柴油 (diesel oil) and dazi 打字 (typewrite) are also organized by their characteristic features of word meaning in terms of the Chinese productive principle. In the compound word chaiyou 柴油 (diesel oil) the first element chai 柴 (firewood [diesel]) is a kind of the fuel which is more close to everyday life in the past time. This element chai 柴 (firewood [diesel]) means ‘firewood’ in Chinese. The second element you 油 (oil) is a category representing a generic name. Therefore, the firewood + the generic name constitute the inner form of compound word chaiyou 柴油 (diesel oil) in Chinese. It is possible that there were a lot of features of entity to choose under initial formation of the inner form. If the inner form of words is reasonable under its initial formation, it is not changeable in choice of features of entities. That is, the inner form of words naturally gives rise to use what word form to name entities, because the feature of entities is fixed by the linguistic material of representing the feature. The compound word dazi 打字 (typewrite) can explain this notion. Two morphemes dazi 打字 (typewrite), meaning ‘beat, characters’, are determined by movement of fingers and result of that movement which are formed of features of typewriting. The inner form of this compound dazi
打字 (typewrite) is reflected in the word meaning of movement and its result. Thus movement and its result forming of the feature of typewriting are realized by the linguistic materials (sound, form and meaning), and the selection of features for typewriting displays the motivation of this compound dazi 打字 (typewrite). As a result, the identification of features for that object leads to the formation of initial inner form of words.

The examples mentioned above belong to Chinese compound words in which there is an inner form to be analyzed in terms of the way of expression of word meaning. However, the inner form as the way of expression of word meaning has hardly been found in Chinese simple words (Liu Shuxin, 1990). The direct reason is that most of simple words consist of a single morpheme, and it is hard to find the feature of what the morpheme denoted under its initial production. The inner form of simple words may have disappeared, but no composition with other morphemes in Chinese linguistic history. An exception is that onomatopoeic words and echoism as a simple word are the inner form of simple words (Görlach, 1994; Wang Ailu & Si Fuzhen, 2001). ‘The arbitrary character is not challenged by onomatopoeia’ (Görlach, 1994: 12); phonic loans and the part of sound from loan blends which imitate foreign sounds or pronunciation can be viewed as a Chinese onomatopoeic word in a broad sense (Wang Ailu & Si Fuzhen, 2001: 15). As simple words, however, phonic loans do not have their own inner form, although they feature the exotic phonetic motivation. The inner form of phonic loans exists in original languages only under linguists’ investigation of etymology (Liu Shuxin, 1990: 218). Examples katong 卡
通 (cartoon), and bu’ershiweike 布尔什维克 (болшевик [Bolshevik]) can explain this notion. In the phonic loan katong 卡通 (cartoon), the sense of bisyllabic word (ka 卡 ‘block’ and tong 通 ‘pass’) as a whole cannot segment, because it represents a complete word meaning in Chinese. The expression of word meaning is only a foreign sound as a morpheme. Usually, a complete foreign sound appears as the feature of this kind of borrowed words. However, this feature of foreign sound which is formed of motivation for phonic loans differs from the inner form of compound words. As the bisyllabic phonic loan as a simple word, more syllabic phonic loans, for example bu’ershiweike 布尔什维克 (болшевик [Bolshevik]), are viewed also as a simple word which does not have the inner form of words in Chinese.

In short morphemes are the smallest linguistic unit of composite words. In modern Chinese, the building elements can be divided into indigenous and foreign morphemes. Compound words are made of morphemes derived from monosyllabic simple words (represented by individual characters) and extracted from phonic loans. As a type of compound words, FICT following Chinese productive principles should adopt these main morphemes as discussed above. Apart from analysis of the linguistic materials for simple and compound words, the inner form of words can be understood as a way of expression of word meaning, and as a motivation of compound words. The examination of inner form of Chinese words is beneficial to analysis of the structure of words, particularly compound words. In other words, the inner form of words is connected with structures of words in the study of FICT.
5.4 Compound Model

The compound model is a pattern of producing words according to the typically semantic structures of modern Chinese compound words. In modern Chinese, the compound words of headedness as nominal and verbal constituents as mentioned above are predominant (Lu Zhiwei, 1964; Bian Chenglin, 2000; Packard, 2006). The compound words of modern Chinese are usually composed of more than two morphemes (more than two characters). As discussed above, the individual character as a morpheme may serve as a simple word which denotes form classes such as noun, verb, adjective, and adverb etc. or affixes, although many individual words or morphemes can belong to more than one form class category (Packard, 2006: 35). Chinese compound words can be divided into two major types: nominal and verbal compounds. In the nominal compounds, for example, disyllabic compound words gangqin 钢琴 (steel, music instrument [piano]), and yinhang 银行 (silver, business [bank]) are composed of two nouns (noun + noun); polysyllabic compound words haianpao 海岸炮 (sea, bank, gun [Krupp]), fengyubiao 风雨表 (wind, rain, gauge [barometer]) are consisted of three nouns (noun + noun + noun). The compounds of adjective and noun or adjective, noun and noun are examples of words huangyou 黄油 (yellow, grease/oil [butter]) and changbiyuan 长臂猿 (long, arm, ape [gibbon]). The verb-noun (jiangtai 讲台 {explain, stage [platform]}), or verb-noun-noun (wangyuannjin 望远镜 {gaze, far, mirror [telescope]}) can also form nominal compound words. In verbal compounds, for example, the word dizhi 抵制 (resist,
sanction [boycott] and *paimai* 拍卖 (beat, sell [auction]) are incorporated by two verbs (verb + verb), respectively. The subtype of verbal compounds, of course, contains noun plus verb and verb plus noun, which are less than nominal compounds presented in the list of foreign-inspired Chinese terms. It is noted that some compound words composed of verb plus verb can also function as noun, for example, *maiban* 买办 (buy, manage [comprador]), and *feiwen* 飞吻 (fly, kiss [a blown kiss]).

Quasi-affixes which form word constituents act as morphemes of producing compound words, for example *xue* 学 (studies), *shi* 士 (scholar), *dian* 电 (electricity), in compound words *huaxue* 化学 (chemistry), *dizhixue* 地质学 (geology); *xueshi* 学士 (bachelor), *shuoshi* 硕士 (master), *boshi* 博士 (doctor, PhD); *diandeng* 电灯 (electric lamp), *dianying* 电影 (movie), *dianche* 电车 (tramcar). These compound words are sometimes considered as derived words, because they are formed from quasi-bound morphemes (Lü Shuxiang, 1962; Chao Yuanren, 1968; Yin Binyong, 1984; Packard, 2006). In Chinese scholarship, free or bound morphemes such as *xue* 学 (studies), *shi* 士 (scholar), *dian* 电 (electricity) have been the subject of controversy over differing opinions (Pan Wenguo et al., 2004). Comparing different analyses of free and bound morphemes and based on the examples of FICT provided in the appendix of this study, this thesis agrees with Lü Shuxian (1962) and Lu Zhiwei (1964) that individual use is a major criterion of distinguishing free and bound morphemes. According to this criterion, the morphemes of *xue* 学 (studies), *shi* 士 (scholar) and *dian* 电 (electricity) can be used
individually and can serve as simple words in traditional Chinese. Furthermore, the compound words composed of morphemes such as \(-xue\) (studies); \(-shi\) (-scholar); \(-dian\) (electricity-) appear as a model of word structure as follows:

\[X + xue\] 学; \[hua + xue\] 化学 (change + studies [chemistry]);

\[X + shi\] 士; \[xue + shi\] 学士 (studies + scholar [bachelor]);

\[X + shi\] 士; \[shuo + shi\] 硕士 (big + scholar [master]);

\[X + shi\] 士; \[bo + shi\] 博士 (abundant + scholar [doctor]);

\[dian\] 电 + \[X\]: \[dian + deng\] 电灯 (electricity + lantern [electric lamp]);

\[dian\] 电 + \[X\]: \[dian + ying\] 电影 (electricity + shadow [movie]);

\[dian\] 电 + \[X\]: \[dian + che\] 电车 (electricity + vehicle [tramcar]).

This model is a pattern for the production of neologisms. Most new words in Chinese are based on an existing word coinage frame (Li Yuming, 1999), and the morpheme is a constituent component in the compound word model, including foreign-inspired Chinese terms.

5.5 Model of Foreign-inspired Chinese Terms

The model of foreign-inspired Chinese terms (FICT) is defined as an appropriate
pattern of word coinage for peripheral borrowing. According to Dong Xiufan (2004), a combination of two nominal constituents forms the best model of producing neologisms in Chinese morphological structures (p.129). There are more noun + noun compounds in the list of examples here than verb + verb compounds. Here a model of nominal FICT as peripheral borrowings in terms of morphological rules: distinctive properties + generic name. This model is adapted to FICT nominal structures because terms representing foreign entities or concepts appear as a noun, while the words representing action and state from foreign nations number less than nouns in modern Chinese. In spite of this situation, we will adopt the model of verbal FICT (manner or cause + action or result), proposed by Dong Xiufan (2004: 137), conforming to the verbal structure.

The semantic model ‘distinctive properties + generic name’ of foreign-inspired Chinese terms is formulated on the basis of Chinese scholarship (Li Yuming, 1999; Ye Wenxi, 1996; Li Jinxia, 2003; Dong Xiufan, 2004, Packard, 2006). In the foreign-inspired Chinese terms model, the ‘generic name’ represents a category of an entity or a concept. People put an entity into a category in terms of understanding the content and nature of entities or concepts. Generally, the words which represent the category of an entity or concept are situated at the generic level of the vocabulary. ‘Distinctive properties’ in the model represents prominent, salient and typical features of an entity or concept—distinguished, outstanding and representative characteristic properties. What happens is that an entity is first put into a category, and then the distinctive property distinguishes the entity from other members in the same category.
It is necessary to clarify that the model ‘distinctive properties + generic name’ of nominal FICT is a conceptual pattern of word production in a broad sense. In the model, the function ‘distinctive’ makes a similar entity or concept different, namely ‘distinctive’ is to distinguish entities. The function ‘properties’ as a mark of entity is to be prominent among the similar things, that is, prominence is for cognition. In the model, ‘generic name’ defines a given category of the entity or concept under the common perception and cognition of language speakers.

In comparison with models proposed by Li Yuming (1999), Ye Wenxi (1996), Li Jinxia (2003), Dong Xiufan (2004), Packard (2006), the distinctive properties plus generic name in the FICT model can better account for linguistic phenomena including examples of foreign-inspired Chinese terms. For example, the compound word *daishu* 袋鼠 (pouch, rodent [kangaroo]), consisting of two morphemes *dai* 袋 (pouch) and *shu* 鼠 (rodent), can be considered as a model of FICT. While the second element of the model denotes the ‘generic name’, the first element is referred to ‘distinctive properties’. The morpheme *shu* 鼠 (rodent) indicates the category of the entity ‘kangaroo’, whereas the morpheme *dai* 袋 (pouch) represents the prominence of the entity ‘kangaroo’.

Concrete entities, generally speaking, reflect certain properties perceived by native language speakers and given names more easily than abstract concepts, using the model of foreign-inspired Chinese terms (see Chapter 6). However, the model of ‘distinctive properties + generic name’ can also apply to word production or semantic structural analysis of vocabulary for abstract concepts in the list of FICT terms, for
example the compound word *qingrenjie* 情人节 (lover, festival [Saint Valentine’s Day]), composed of three characters *qing* 情 (feeling), *ren* 人 (person) and *jie* 节 (festival). The first two morphemes *qing* + *ren* 情+人 (lover) together represent the distinctive properties in the model. The last morpheme in the this compound *jie* 节 (festival [Day]) as a generic name of the model is a semantic translation, where the linguistic correspondence relates to resemblance of structure or word meaning between different languages. The word *qingrenjie* 情人节 can be distinguished with other traditional festivals or days such as *chunjie* 春节 (Spring Festival) and *qingmingjie* 清明节 (Pure Brightness Day) in Chinese, and this distinction makes the term effective. The word *qingrenjie* 情人节 carries cultural and historic property, and people can perceive its features in terms of foreign concepts. Based on typical features of culture and history, native language speakers distinguish typicality of similar concepts, understanding the meaning of original vocabulary or term. The distinction of abstract concepts is realised by the cognition of Chinese and foreign cultures, and by linguistic sense or rules. From this point, the process of cognition is more complex than perception, which reflects on sensory word production (see chapter 6).

The semantic model of foreign-inspired Chinese terms ‘distinctive properties + generic name’ may be also viewed as a nominal combination. From the perspective of categorization, the attribution of two elements (distinctive properties and generic name) in the model does not mean that they are equal with each other (see Chapter 4). In the model of noun + noun, the latter noun denoted ‘generic name’ is sometimes the
atypical noun of the category: the noun in the second element of the model derives from a common noun, through metaphor or metonymy. For example, the compound word *shuilongtou* 水[龙头] (water, dragon’s head [[water] tap]) is composed of three morphemes *shui* 水 (water), *long* 龙 (dragon), and *tou* 头 (head). The morpheme *tou* 头 (head) cannot be considered an element representing ‘generic name’ of the model. It is definitely a category for the top end of a body, such as *rentou* 人头 (person’s head), *zhutou* 猪头 (pig’s head), and *yangtou* 羊头 (sheep’s head). In modern Chinese as in other languages, the meaning of ‘head’ as a part of human body can make the metaphorical expression (Ning Yu, 1998; Lakoff, 1987). In this sense, the morpheme *tou* 头 (head) with other morpheme *long* 龙 (dragon) constitutes a metaphorical sense (see detailed discussion in Chapter 7), which represents the figure of ‘tap’. In the model of noun + noun, the former noun represents a property of the entity, i.e. the morpheme *shui* 水 (water) in the case.

Applying the model to loan blends in modern Chinese, the generic name representing a category of entities or objects can incorporate the phonic loan, for example the word *shahuang* 沙皇 (sand, emperor [царь {tsar; czar}] consists of the phonic borrowing *sha* 沙 (clipping of tsar or czar) and generic name *huang* 皇 (emperor). This kind of loan blend coincides with the model of FICT in phonological and morphological structure according to Dong Xiufan (2004). Usually, the structure of Chinese compound words derives from words of disyllable or more in the phonology. In this case, firstly, the second character *huang* 皇 (emperor) is identified to be ‘czar’ by native speakers and it represents the meaning of category of foreign
entities with Chinese concept. Secondly, *sha* is a phonic loan and acts as the distinctive properties of the FICT model. The structure ‘foreign sound + generic name’ reflected in the word *shahuang* as a model of word coinage is only a variant of the FICT model of ‘distinctive properties + generic name’. There are no differences between two models in nature. In this case, the morpheme *sha* as a foreign morpheme indicates the ‘distinctive property’. A foreign morpheme can also serve as the ‘generic name’ as in the words *daba* 大巴 (big, clipping of bus), *zhongba* 中巴 (middle, clipping of bus) and *xiaoba* 小巴 (small, clipping of bus). At the same time semantic recognition is also a major element in the process of reproduction of foreign words, because the ‘generic name’ can represent a category of foreign entities or objects, and can help native speakers to understand and conceptualise the kind of entity concerned. Phonic borrowing without the generic name will not make sense to Chinese native speakers unless the meaning is memorised.

To sum up, the model of foreign-inspired Chinese terms derives from the model of compound words in modern Chinese, proposed by Chinese linguists Li Yuming (1999), Ye Wenxi (1996), Li Jinxia (2003), Dong Xiufan (2004), Packard (2006). The model relates to the motivation of word production for FICT. The semantic structure realised by different models of words can be viewed as the outer linguistic form of the motivation. The model of compound words follows Chinese specific linguistic rules applying to word production and analysis of words, including FICT. The model tied to word production and analysis of FICT is a typical semantic structure. In modern
Chinese, there are nominal and verbal compound words, but the nominal compound word is predominant in the list of examples of FICT. The model of ‘distinctive properties + generic name’ can better explain the nominal compound words as we have seen in the discussion.

Having examined the model of compound words, we are going to discuss the issue of categorization of the model in detail.

5. 6 Categorization in the FICT Model

The two parts in the FICT model, ‘distinctive properties’ and ‘generic name’, can be analysed by categorization theory within cognitive semantics, where linguistic variety can be analysed in terms of the prototype theory, which concerns ‘the nature and structure of concepts’ (Cruse, 2006: 146). The prototype is a schematic representation of the most salient characteristics associated with members of the category. ‘Categorization involves the apprehension of some individual entity, some particular of experience, as an instance of something conceived more abstractly that also encompasses other actual and potential instantiations’ (Croft & Cruse, 2004: 74). According to this formulation, a specific animal can be an instance of the species ‘dog’, a specific patch of colour as a manifestation of the property ‘red’, and so on. Categorization tends to the basic and tends to classify particular experiences in terms of an individual entity. Generic concepts mostly function to identify and characterize individuals. A particular individual concept may be referred to as a bundle of
knowledge (Croft & Cruse, 2004).

FICT model categorization relates to generic category, perceptual salience, family resemblance and distinctive properties within categories. These aspects are concerned with definitional problems, the problem of conceptual fuzziness, the problem of typicality, and the basic level of categories from the perspective of prototype theory.

5. 6. 1 Generic Category

The two parts of FICT model word production, ‘distinctive properties’ and ‘generic name’, are concerned with the issue of attributes. An attribute is ‘a concept that describes an aspect of at least some category members’ (Barsalou, 1992: 30). The second part in the FICT model refers to a generic category as one of the constituents of a compound word. The constituents shou 獸 (animal/beast), ma 马 (horse), lü 驴 (donkey), lu 鹿 (deer) representing a part of meaning of original ‘zebra’ occur respectively in the following words:

1. banma 斑马 (stripe, horse)
2. banlü 斑驴 (spot, donkey)
3. huama 花马 (variegated, horse)
4. hualü 花驴 (colored, donkey)
5. huashou 花兽 (variegated, beast)
6. *huatiaoma* 花条马 (variegated, striped, horse)

7. *fulu* 福鹿 (happiness, deer)

These compound words are derived from the FICT list, compiled from *An Etymological Glossary of Selected Modern Chinese Words* by CLSHK (2002). According to the FICT model, the constituents *shou* 兽 (wild animal/beast), *ma* 马 (horse), *lü* 驴 (donkey) and *lu* 鹿 (deer) are generic names, defined as a given category of the entity or object as commonly perceived by speakers of the language. However, there are some problems. If these cognitive categories such as *shou* 兽 (animal/beast), *ma* 马 (horse), *lü* 驴 (donkey), *lu* 鹿 (deer) are made up of prototypes and peripheral issues, of good and bad examples, how do these differ and how are they related to each other? To answer these questions, here is some information on dictionary definitions for types of animals:

**Animal:**

1. a sentient organism, distinguished from a plant, typically endowed with voluntary motion and sensation;

2. any such being as distinguished from a human being;

3. a debased and bestial human being;

4. domestic quadruped;

5. any being but a bird, fish or insect.
Horse:

1. a large, solid-hoofed quadruped with coarse mane and tail: commonly, in
the domestic state, employed as a draught horse and beast of burden, and
especially to be ridden;
2. any of various extinct mammals supposed to be of the ancestral line of
the horse, as the eohippus;
3. a male horse especially when castrated.

Donkey (ass):

a long-eared equine quadruped smaller than the ordinary horse.

Deer:

1. a ruminant having deciduous antlers, usually in the male only, as the
moose, elk, and reindeer;
2. a deer-like animal;
3. formerly, any quadruped; a wild animal.

(Based on Marckwardt, 1976)

These dictionary definitions provide some valuable information for language speakers
in terms of categorization. Firstly, the dictionary entries supply the name the category
to which the animal, the horse, the donkey and the deer belong (in this case ‘animal’).
This category name in turn suggests the properties shared by most animals: they are
sentient living organisms quadruped, domestic or wild, and they bear young. Secondly, the main body of dictionary entries lists properties which are specific to the item in question. Thus the horse is characterized by being of large size, a solid-hoofed quadruped, coarse mane and tail. These properties clearly set the horse apart from other members of the category ‘animal’, such as the donkey and the deer. So the horse, donkey and deer have properties which serve to tie them to a common category as well as properties which distinguish them from each other. The information from dictionary entries which give the category name and shared properties seems inadequate to evaluate examples of the category, perhaps implying that dictionary definitions are written for a practical purpose and not with systematic linguistic and cognitive analysis in mind (Ungerer & Schmid, 1996).

Natural categories are a product of the human perceptual and cognitive apparatus for dealing with a word (Rosch & Mervis, 1975). The attributes used in dictionary entries may be sufficient to be understood in the rather vague sense of features, but human categories are not the necessary and sufficient conditions assumed by Aristotle’s ‘categorical view’, and the concept of a prototype may be appropriate: a relatively abstract mental representation that assembles the key attributes that best represent instances of a given category. In the case of the category ‘animal’, this means that a being is an animal if and only if it is a sentient organism, quadruped, and bears young.

This however is still not adequate to clarify a category’s prototypical attributes as differentiated and experiential features, for which more attributes are needed than
those found in dictionary entries. To take up the proposal to name the entity ‘zebra’ by native language speakers, common attributes of the category *shou* 兽 (animal/beast), *ma* 马 (horse), *lū* 驴 (donkey), *lu* 鹿 (deer) are:

1. large size
2. mane
3. tail
4. quadruped hoofs
5. runs fast
6. ears
7. mouth
8. nose
9. can be farmed
10. livestock

This list above is based on definitions of ‘animal/beast’ in various dictionaries. Such a list will never be complete: for example the milk and meat are edible, and items will tend to overlap, for example the ninth attribute implies the herding instinct. If we try to apply the attributes collected for horses to other examples of the category ‘animal/beast’ such as *lū* 驴 (donkey/ass), *lu* 鹿 (deer), *shou* 兽 (animal/beast), *ma* 马 (horse) and *lū* 驴 (donkey/ass) share all the attributes assembled for animals or beasts. *Lu* 鹿 (deer) tends to have fewer common attributes within the category of animals. *Lu* is a quadruped with hoofs, has a tail and runs fast, but the male has deciduous antlers, and most deer are wild.

The concept *shou* 兽 (animal/beast) often serves as vocabulary at superordinate level where it represents abstraction of the entity, and thus covers all attributes of the relevant category. According to prototypical principles, the concept is central, but
according to the practical observation of frequency this concept is seen to be peripheral. The reason for this is that the abstraction is stronger than the differentiation in use of concepts. A noun of generality tends to be part of common usage. The words contained the meaning of the distinction belong to the common vocabulary, but are usually at generic level. Therefore it is not strange that native language speakers substitute a generic level concept for the concept of superordinate levels, because 马 (horse) or 驴 (donkey/ass) as a concept of the generic level may completely represent the attributes of the category.

The attributes of the entity ‘zebra’ are basically close to the attributes of 马 (horse) and 驴 (donkey), with the exception of the zebra’s stripes. In terms of categorization principles, the concept 马 (horse) is suitable to apply to the entity ‘zebra’, and native language speakers in the end selected the member of the category 马 (horse) as a generic name for the entity ‘zebra’ –斑马 [striped, horse]. Originally other members of the category—驴 (donkey), 鹿 (deer), 兽 (animal/beast)—were the basis of compound words 斑驴 (spot, donkey); 花马 (colored, horse); 花驴 (colored, donkey); 花兽 (colored, anima/beast); 花条马 (colored, striped, horse); 福鹿 (happiness, deer). Other perspectives on linguistic change, the choice of generic name for ‘zebra’ also indicates that it followed the prototypical category.

5. 6. 2 Perceptual Salience
Salience concerns the basic phenomenon of attention in cognitive psychology. Salience relates to a complex psychological ability whose different aspects can be most easily illustrated by visual ability (Croft & Cruse, 2004: 47). To apply this in the present study, categorization arises from perceptual stimuli (according to Rosch’s findings). Perceptual salience may be categorised in terms of types of sensory-perceptual input, including shape, size, color and texture; it may also be categorised according to kinaesthetic input, which will be discussed in Chapter 6. The other main categorisation method is description of the importance of the basic level (this was discussed in Chapter 4). The basic level represents the most salient level of categorization.

There are three levels in language system: basic, superordinate and subordinate categories. The basic level category seems to be the most abstract level at which it is possible to form a mental image. The abstract level relates to inclusiveness and specificity among the levels of categories. It would understand if language speakers identify a category, they might speak of one or items of that category with examples which stored and formed of an image in mind. The specific examples usually belong to the basic level category of vocabulary from the perspective of the linguistic investigation. The category *shou* 兽 (animal/beast), *ma 马* (horse), *lü 驴* (donkey), *lu 麂* (deer) as a generic name in the model of FICT should divide into two categories in terms of mental image. The concepts *ma 马*, *lü 驴*, *lu 麂* (deer) are included in the basic category, while the concept *shou 兽* should go into the superordinate category. This division is consistent with the attributes of the category
shou 兽 (animal/beast), ma 马 (horse), lu 驴 (donkey), lu 鹿 (deer). However there are insufficient similarities between the entities at the superordinate level, and the concept shou 兽 is excluded from the prototypical centre and goes to the periphery of the category.

The categories ma 马, lü 驴, lu 鹿 (deer), at basic level can be seen as vocabulary of the visual image. According to this visual image, the entity ‘zebra’ was conceived as the category ma 马, lü 驴 (donkey) or lu 鹿 (deer) by Chinese language speakers at the time, and so the related compound words occurred. Why did the concept ma 马 (horse), finally prevail in modern Chinese over the concepts lü 驴 (donkey) and lu 鹿 (deer)? The answer lies in the concept of family resemblance.

5. 6. 3 Family Resemblances

The concept of ‘family resemblances’, as noted by Wittgenstein (1958), refers to a network of overlapping similarities. Rosch and her colleagues found a principle of family resemblances based on their experiments and they defined it as follows:

a set of items of the form AB, BC, CD, DE. That is, each item has at least one, and probably several, elements in common with one or more other items, but no, or few, elements are common to all items (Rosch & Mervis, 1975: 575).

It will be useful to find the overlapping similarities of the category (sometimes called
‘subcategory’) *shou* 兽, *ma* 马, *lù* 驴, *lu* 麒. Similarity derives from the attributes of all members within a category. The concept of overlapping similarities of categories should be viewed as a prototype structure which serves to maximize shared information contained within a category. The principle of family resemblances opens up an alternative to the classical view that attributes must be common to all category members, that they must be ‘category-wide’ (Ungerer & Schmid, 1996). In Rosch’s view, ‘prototypes appear to be those members of a category that most reflect the redundancy structure of the category as whole’ (Rosch, 1978: 260). The prototype structure of the category reflects this ‘redundancy’ in terms of repeated attributes across distinct members, or examples (Evans & Green, 2006). The more category-relevant attributes a particular entity has, the more representative it is.

*Shou* 兽, *ma* 马, *lù* 驴, *lu* 麒 in terms of attributes of members within a category have some specific attributes rather than common ones and can be defined as a category and subcategory as follows:

Category: *Shou* 兽 (animal/beast)

1. any creature except birds, fish or insects
2. a sentient living organism
3. a domestic or wild

Subcategories:

*Ma* 马 (horse) as in words *banma* 斑马 (stripes, horse [zebra]) and *huama* 花马
(variegated, horse)

1. has short ears
2. has a long tail
3. has different colors

$Lü$ 驴 (donkey) as in words banlù 斑驴 (spot, donkey); hualü 花驴 (variegated, donkey)

1. has long ears
2. has a short tail
3. has black and white colors

$Lu$ 麋 (deer) as in word fulu 福鹿 (happiness, deer)

1. has deciduous antlers (usually in the male only)
2. has short ears
3. is a wild animal

$Shou$ 兽 (animal/beast) as in word huashou 花兽 (variegated, animal/beast)

1. any creature but a bird, fish or insect
2. a sentient living organism
3. domestic or wild

$Shou$ 兽 (animal/beast) in huashou 花兽 (variegated, animal/beast) which Chinese
native speakers categorize as ‘zebra’, has parallel membership in the same subcategory as *ma 马, lü 驴* and *lu 麋* (deer). In fact *shou 兽* is at a superordinate level of vocabulary, and may be considered a category on its own, but in this case it is placed in the subcategory described.

The relevant attributes together with common ones serve as a basis of identification of prototype structure. *Ma 马* as a member of the subcategory (horse) is highly prototypical, possessing many common and specific attributes found across other members of the subcategory, compared with the particular category ‘zebra’. The members *lü 驴* (donkey) and *lu 麋* have much fewer common and specific attributes recognized among members of the subcategory. Thus the member *ma 马*, in a subcategory under the category *shou 兽* (animal/beast) is fairly representative, but also shares a number of attributes and so exhibits a degree of family resemblance. Category members are also distinguished by distinctive properties among the relevant attributes. The distinction of size, colour, ear, tail, antler, livestock or wild also determines the degree of family resemblance within the subcategory by contrast with the entity ‘zebra’. *Ma 马* is close to the entity ‘zebra’ in attributes such as size, color, ear, tail and livestock or wild. The member *lü 驴* (donkey) is basically similar to ‘zebra’ in the size and colouring on the body.

5. 6. 4 Distinctive Properties

Distinctive properties relates to the selection and arrangement of the information
that is expressed (Ungerer & Schmid, 1996). Selecting or arranging the information concerns the figure/ground of the entity. ‘The figure has form or shape whereas the ground is formless and the shared contour seems to belong to the figure. The figure appears to lie in front of ground which extends more or less continuously behind it (Ungerer & Schmid, 1996: 157). The figure is perceived as being more prominent than the ground.

In the model of FICT, the distinctive properties as a first element of compound words, generally speaking, is based on the human visual perception. Take examples for the entity ‘zebra’ again as follows:

1. banma 斑马 (stripe, horse);
2. banlü 斑驴 (stripe, donkey);
3. huama 花马 (variegated, horse);
4. hualü 花驴 (variegated, donkey);
5. huashou 花兽 (variegated, animal/beast);
6. huatiaoma 花条马 (variegated, striped, horse);
7. fulu 福鹿 (happiness, deer).

Except for the word fulu 福鹿 (happiness, deer), the terms concern the figure and ground of the entity These six words may be grouped in three categories: (1) banma 斑马 (stripe, horse), banlü 斑驴 (stripe, donkey); (2) huama 花马 (variegated, horse), hualü 花驴 (variegated, donkey), huashou 花兽 (variegated, animal/beast);
There are thus three categories, (1) stripe; (2) variegated colored; (3) variegated, striped, which are attached to certain aspects of the entity. However it does not really explain why these three aspects or figures appeared at the time when the entity 'zebra' came to Chinese awareness. The phenomenon, 'figure/ground motion', means that with 'zebra' the selected figures are the morphemes ban 斑 (stripe), hua 花 (variegated) and huatiao 花条 (variegated, striped). These represent the property of the entity, whereas the ground is a formless contour. The figures represent properties of the entity from different places. They are visually prominent and will be perceived in terms of different figure/grounds. This implies that in word production the perceptual prominence of the entity is very significant.

The word ‘giraffe’ has been introduced into Chinese as changjinglu 长颈鹿 (long, neck, deer [giraffe]), changjingguaima 长颈怪马 (long, neck, strange, horse [giraffe]), baotuo 豹驼 (leopard, camel [giraffe]), shouma 兽马 (animal/beast, horse). There are also six phonic loans. (see Appendix, list of examples). Besides phonic loans and shouma 兽马 (animal/beast, horse), changjing 长颈 (long neck) and bao 豹 (leopard) as the first element of the FICT model derive from visual perception. The picture ‘giraffe’ is seen as figure, while the space behind it is a formless ground. As the gaze moves up higher the neck of giraffe is seen as longer than the other animals’. The shape of neck is thus distinctive and prominent over the whole figure. We know that at a glance, only because it is different from other animals, i.e. distinctive. To look at the whole figure of the giraffe, some spots are
apparent on its body, which are reminiscent of a leopard or cheetah.

To arrange properties selected by conceptual prominence in terms of the FICT model may not be easy. In fact rational analysis tends to determine properties of entities. The dominance of banma and changjinglu against other variant forms clearly relates to distinction from other forms and the ready identification of the word with the animal referent. The idea of bao 豹 (leopard) may have a certain relevance to ‘giraffe’, but it is not an intuitive rendering and there could be confusion with the leopard or cheetah. It is little wonder that changing 长颈 (long neck) as a distinctive property of the entity ’giraffe’ is still viable after a hundred and fifty years (CLSHK, 2002: 28).

Distinctive properties as a part of the model of FICT are widely used in the production of words for foreign entities or concepts. In modern Chinese, the English word ‘kangaroo’ daishu 袋鼠, combining pouch and rodent, has been coined by the perceptual property of the entity. The example of huangyou 黄油 (yellow, oil/grease) from the entity ‘butter’ does not represent the perceptual property of the entity, which appears as white-yellowish color. Avoiding white colour (using in the phonic loan baituoyou 白脱油 [white, take off, oil/grease] occurred in Shanghai dialect), native language speakers employ the yellow color to represent the property of the entity. This is a less typical example as a distinctive property of sensory-perception.

5. 6. 5 Categories of FICT
In terms of motivations of word production, all collected examples of FICT are categorized as three types: sensory-perceptual, spatial, and functional. As mentioned above, examples of FICT composed of two or more syllabic morphemes can be examined from different perspectives of word production or formation. In other words, both central and peripheral parts of compound words as FICT can serve as a benchmark of categorization. In the process of marking categories, the prominent part of word meaning determines in which category examples of FICT include. The three categories of FICT are as follows:

1) sensory-perceptual:

Some foreign-inspired Chinese terms are motivated by human perception, through the senses of touch, sight, hearing, taste and smell. Among these sensory organs the visual sense is prominent in word production of foreign entities or concepts. Vision is concerned generally in color, shape, shape-size, shape-color of entities, which are motivation of word production for foreign-inspired Chinese terms:

Colour: *baimianr* 白面儿 (white, flour [heroin]); *hongcaitou* 红菜头 (red, vegetable, head [beet roots]); *heisibing* 黑死病 (black, dead, disease [bubonic plague]);

Shape: *shuqin* 竖琴 (vertical, qin [harp], *matibiao* 马蹄表 (horse’s hoof-shaped clock [alarm clock], *baoxincai* 包心菜 (wrapping, heart, vegetable [cabbage]);

Shape-size: *changhao* 长号 (long, horn [trombone]), *changjinglu* 长颈鹿 (long,
neck, deer [giraffe]; chaoduanqun 超短裙 (super, short, skirt [miniskirt]);

Shape-color: xuehuagao 雪花膏 (snow, flower, cream [vanishing cream]).
honglingjin 红领巾 (red, collar, a piece of cloth [Young Pioneer]), xilanhu 西兰花 (western, blue, flower [broccoli]);

Typically the determination of what a particular substance is follows visual distinction. Examples are qianqiu 铅球 (lead, ball [shot], qianzi 铅字 (lead, character [type]); guanxianyue 管弦乐 (pipe, string, music [orchestral music]); naizuir 奶嘴儿 (milk, mouth + [suffix] [nipple]) can be included in sensory-perceptual word production.

Other senses are also mobilised to form foreign-inspired Chinese terms. These words are categorized as sensory-perceptual as follows:

Hearing: huaxiazi 话匣子 (speech, box + [suffix] [gramophone; radio])

Touching: ruanmusai 软木塞 (soft, wood, stuff [cork])

Smell: wuyanmei 无烟煤 (non-smoke, coal [anthracite])

Taste and smell: xiangcai 香菜 (fragrant, vegetable [coriander])

In addition a sensory motor category is associated with FICT word production. Words like tuizi 推子 (push + [suffix] [hair-clippers]), zhuangsuo 撞锁 (bump against, lock [spring lock]), yaobaiwu 摇摆舞 (swing, dance [disco]) fall into the sensory-perceptual category of foreign-inspired Chinese terms.
2) spatial:

Spatial senses are also motivations of word production for FICT. Spatial sense refers to physical entities, orientational entities and temporal entities. Physical entities are understood as concrete entities which have spatial extension. Consider it with following examples:

*guantou* 罐头 (pot + [suffix] [tin])

*jianshenfang* 健身房 (health, body, room [gymnasium])

*qi’e* 企鹅 (look forward to, goose [penguin])

These entities are bounded by a clear contour, located in a three-dimensional space, and are easy to recognize as an organic whole (Seto, 1999). Entities with clear contours are relatively constant as to their perceptual properties. Some physical entities have less clear contours and they are recognized as discrete entities by imposing a contour on them mentally or physically.

Orientational entities are concerned in orientation concepts which derive from linguistic metaphors. Words that belong to direct orientation concepts are as follows:

*yangcong* 洋葱 (foreign, shallot [onion]),

*xiqin* 西芹 (western, celery [celery])

*fanqie* 番茄 (foreign, eggplant [tomato])
Metaphorical orientation concepts are widely used for FICT production in modern Chinese, and denote indirect orientational entities.

Temporal entities are bounded by a temporal frame, and a framed event can behave more or less like spatial entities (Seto, 1999: 97). Linguistically, ‘space and time are always treated as grammatically parallel’ (Yu Ning, 1998: 83) and ‘space is in its very nature temporal and time spatial’ (from Yu Ning, 1998: 83). Based on these formulations, temporal entities may be drawn into a spatial category of foreign-inspired Chinese terms. Examples of temporal entities as spatial concepts extension are listed below:

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**hujiao** 胡椒 (foreign, pepper [pepper])

Metaphorical orientation concepts are widely used for FICT production in modern Chinese, and denote indirect orientational entities.

**waike** 外科 (out, a branch of medicine [surgery])

**neike** 内科 (in, a branch of medicine [therapy])

**dongyu** 东语 (east, language [Japanese])

**xijiao** 西教 (western, church [Protestantism])

**xiyi yuan** 下议院 (below, discussion, court [House of Common])

**shangyi yuan** 上议院 (above, discussion, court [House of Lords])

**xingqi** 星期 (star, period [week])

**jieliri** 节礼日 (festival, gift, day [boxing day])
3) functionality

Examples of functionality in FICT word production are:

- **biyuntao** 避孕套 (avoiding, pregnant, cover [condom])

- **bileizhen** 避雷针 (avoiding, thunder, needle [lightning rod])

- **duantoutai** 断头台 (breaking, head, stage [guillotine])

It is noted here that one foreign entity through functions from different perspectives or in different situations can give rise to different words in Chinese. Examples are demonstrated with the English word ‘stopwatch’:

- **mabiao** 马表 (horse, timepiece)

- **paobiao** 跑表 (running, timepiece)

- **miaobiao** 秒表 (second, timepiece)

The word **mabiao** 马表 (horse, timepiece — stopwatch) is used in horse racing (Daoxu xiandai hanyu cidian, 2001: 472); the term **miaobiao** 秒表 (second, timepiece — stopwatch) (ibid) is used often in sports and the scientific research; as for the term **paobiao** 跑表 (run, timepiece — stopwatch), this can apply in horse racing or in sports competition. However there is still the literal translation as
This chapter has explored motivation of Chinese words, particularly foreign-inspired Chinese terms. Apart from motivation, the semantic model of FICT has been analysed with categorization theory within a cognitive semantics approach. All Chinese borrowings were found to be motivated by foreign sounds, meanings and foreign entities in shape, color, size and concepts. Morphemes and compound words in modern Chinese were examined, and a model of compound words for FICT was demonstrated: this model ‘distinctive properties + generic name’ can apply to most examples of FICT. The two parts of this model were analysed separately with categorisation theory. Finally, all collected examples of FICT were categorized as three types: sensory-perceptual, spatial and functional (this will be discussed in chapters 6 and 7).
Chapter Six
Sensory Perceptual Production

6.1 Introduction

Foreign-inspired Chinese terms (FICT) can be categorized into sensory perceptual, spatial, and functional types. This chapter explores the sensory perceptual word production of FICT in the modern Chinese language, relating as it does to cognitive semantics which concerns bodily experience, semantic structure, encyclopedic knowledge and conceptualization. Bodily experience is experience derived from sensory perception and concerns perceptual data derived from the external world (Evans & Green, 2006: 64). Semantic structure is the system where concepts are conventionally encoded in a form in which they can be externalized by language (p. 201). Word meaning cannot be understood independently of the vast repository of encyclopedic knowledge to which it is linked (p. 206). Conceptualization sees language as reflecting patterns of thought, and can be seen as a means of encoding and externalizing thought (p. 98).

In section 6.2 the cognitive view of language is introduced and concerns the relationship between cognition and language. Section 6.3 we presents the embodiment of cognition as studied by different researchers within cognitive
semantics. Section 6.4 examines the principles of cognitive semantics and discusses the processes of word production for foreign entities or concepts. Methods of word production with cognitive and sensory perceptual experiences of the external world are shown, focusing on production of foreign entities or concepts, as well as on reproduction of foreign words in modern Chinese. Section 6.5 analyzes the ways of sensory perceptual production, which underline the human senses—vision, hearing, touching, smell, taste and sensorimotor—for word production. This chapter also examines the semantic FICT model.

6.2 Cognitive view on language

Language is inseparable from cognition. Natural language is a result of human intelligent action and a component of human cognition. The cognition denotes our ability to make sensory experience accessible to the conceptual system by representing it as concepts, together with the information processing that operates over those concepts (Evans & Green, 2006: 240). Cognition precedes language and determines the development of language. Language is a consequence of the ability of cognition to develop to a certain stage. Then the entity which can be understood is expressed by language. Thanks to language, human thought in the internal world and information in the external world can be mutually exchanged, while the human experience can be added as it stimulates to develop the cognition of species and individuals for communication, adjustment and adaptation.
Cognition is a diffuse term and is used in radically different ways. It contains a wider meaning concerning human intelligence and knowledge. The main principle in the field of linguistics is that language creation, learning, and usage must be explained by reference to concepts regarding human cognition. Knowing and naming a new thing is the cognitive process defining its category; mastering a skill or technique is the cognitive effect; solving a problem is the embodiment of the cognitive capacity. According to Ungerer and Schmid (1996), there are three main perspectives: the experiential view, the prominence view, and the attentional view of language. The experiential view employs a more practical and empirical description of language rather than logical rules and objective definitions based on theoretical considerations. Language users are asked to describe what is going on in their minds when they produce and understand words and utterances; the prominence view is concerned with the selection and arrangement of the information that is expressed. It explains why, when we look at an entity in our environment, we single it out as a perceptually prominent figure standing out from the ground; the attentional view assumes that what we actually express reflects which parts of an event attract our attention. It uses attention allocation to explain why one stage of an event is expressed in how we talk about it while other stages are not (Ungerer & Schmid, 1996: xi-xiii). A main concept of this perspective is notion of ‘frame’ (Fillmore, 1975), which reveals the rich network of meaning that makes up our knowledge of words. Depending on our cognitive ability to direct our attention, different aspects of this frame are highlighted, resulting in different linguistic expressions (Ibarrexe-Antunano,
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6. 3 Embodiment of Cognition

As summarized by Evans and Green (2006), the principle of mind/body dualism proposed by French philosopher René Descartes in the seventeenth-century is distinct entities. The mind can be investigated without recourse to the body, and hence without recourse to embodiment. In modern linguistics this rationalist approach has been most evident in formal approaches such as generative grammar approach developed by Noam Chomsky (1968) and formal approaches to semantics such as the framework developed by Richard Montague (1970, 1973). Advocates of these approaches argue that it is possible to study language as formal system, without taking into account the nature of human bodies or human experience. On the contrary, cognitive linguistics is not rationalist in this sense, but instead takes its inspiration from traditions in psychology and philosophy that emphasize the importance of human experience, the centrality of the human body, and human-specific cognitive structure and organization. According to this empiricist view, the human mind and language can not be studied in isolation from human embodiment (Evans & Green, 2006: 44).

Embodiment is a central idea in cognitive linguistics. The idea that experience is embodied states that ‘we have a species-specific view of the world due to the unique nature of our physical bodies’ (Evans & Green, 2006: 45). Our construal of reality is
likely to be mediated in large measure by the nature of our bodies. One obvious way in which our embodiment affects the nature of experience is in the realm of color. The nature of our visual apparatus as an aspect of our physical embodiment determines the nature of our visual experience (Evans & Green, 2006).

The fact that our experience is embodied has consequences for cognition. The concepts we have access to and the nature of the ‘reality’ we think and talk about are a function of our embodiment: we can only talk about what we can perceive and conceive, and the things that we can perceive and conceive derive from embodied experience. From this point of view, the human mind must bear the imprint of embodied experience (Evans & Green, 2006: 46).

6. 4 Principles of Cognitive Semantics

Cognitive semantics is the study of certain regularity of cognition in regard to the process of creation, acquisition, usage and understanding of language, as well as structural models of linguistic knowledge concerning mind and memory. The other way is the choice and arrangement of information expressed by language exceeded the logic rules and objectivity. Occurrence of each event is a continual action that cannot be profiled successively by language, it can choose only important and relevant aspect, the rest is filled up by addressee. The same event or the entity may be expressed by different sentences or words, and choosing the form of sentence or word depends on different prominence that the entity is observed in different way.
For cognitive semantics, it is very hard to distinguish linguistic and non-linguistic knowledge. The appearance of language is a consequence of cognition of the world and it is based on cognition. The process of linguistic creation, usage, and understanding is a cognitive action, and so-called linguistic knowledge is only linguistic sign fixed by knowledge of the world. Based on empirical study in different field, such as cognitive psychology (Rosch, 1973, 1977, 1978; Rosch & Mervis, 1975), and anthropological linguistics (Berlin & Kay, 1969; Kay, 1975), cognitive semantics proves that both the characteristics of languages, and the ability to create, learn and use them are solved by general cognitive abilities, kinesthetic abilities, visual and sensory-motor skills and human categorization strategies, together with cultural, contextual and functional parameters (Barcelona, 1997: 8). Another principle is the embodiment of concepts (Johnson, 1987; Lakoff, 1987; Lakoff & Johnson, 1980, 1999) originated from the modularity hypothesis (Chomsky, 1986; Fodor, 1983). The linguistic modularity hypothesis refers to that there is a specialized and innate cognitive subsystem or ‘language faculty’: an encapsulated system of specialized knowledge that equips the child for the acquisition of language and gives rise to unconscious knowledge of language or competence of the native speaker (Evans & Green, 2006: 144-145).

Cognitive semanticists set out to explore the nature of human interaction with and awareness of the external world, and to build a theory of conceptual structure that is consonant with the ways in which we experience the world. That is to say, for cognitive semanticists, a fundamental concern is the nature of the relationship
between conceptual structure and the external world of sensory experience.

The human experience can be categorized as two kinds — sensory experience and subjective experience in a broad sense. The sensory experience denotes that experience derived from sensory perception and concerns perceptual data derived from the external world. Concepts that derive from sensory experience include those relating to the domains of space, motion, temperature and so on. The other kind of experience is introspective or subjective experience. This is subjective or internal experience in nature, and includes emotion, consciousness and experiences of time such as awareness of duration, simultaneity and so on (Evans & Green, 2006).

Sensory experience is received via perceptual mechanisms. These mechanisms are rather sophisticated and provide structure that is not necessarily apparent in the raw perceptual input. That is, what we perceive is not necessarily the same as what we experience directly. The perceptual mechanisms that facilitate our experience were formalized by the movement (Evans & Green, 2006: 65).

As discussed above, the process of creation is a cognitive action, which contains a cognitive word production and a sensory perceptual production according to principles of cognitive semantics.

6. 4. 1 Cognitive Reproduction and Production

Cognitive production is a means for word production of the foreign entity that does not exist, roughly speaking, as an expression in foreign languages. In other
words, the Chinese words are produced by inspiration of foreign entities or concepts. Cognitive reproduction is the way for renaming a foreign entity or concept that has, by comparison, a name or an expression in a foreign language. In number of these two ways of word production, there are more words of reproduction than the vocabulary of production in modern Chinese according to our observation and investigation. Few Chinese vocabularies are inspired mainly by foreign entities or concepts, not by semantic translation or phonetic transliteration (phonic or semantic loans).

While a concept of foreign words or foreign entities is introduced into Chinese vocabulary, Chinese native speakers reproduced or produced a word to adapt the corresponding original word or foreign entity. As Yu Jianzhnag (1989) assumed that in Chinese a concept which is understood by imagination is given rise to a process of word production by the category of entities and pictographic characters. This is an action of the symbolist form based on the principle of creation of Chinese characters. The category of entities and pictographic characters originate from the direct vision first, and then the perceptual picture is classified by a certain abstraction. When native speakers reproduce or produce foreign words or foreign entities, the concept of foreign terms or entities has been brought into a Chinese conceptual system of categories and the foreign concept serves as a reference for a conceptual category. To be more precise, the foreign concept is a basis of word production in modern Chinese.

‘Each conceptual category in Chinese is a cognitive model. To be exact, it is a perceptual model, because this kind of models does not come from the rational
abstraction’ (Yu Jianzhang, 1989: 51. Translation is done by author of this study). In some cases, the production of foreign concepts and entities could be either rational or perceptual. The eyes are simply perceptual sense of knowledge, while the reasoning is the matter of mind (Zhu Guangqian, 1990).

Reproduction is a process of choosing appropriate linguistic shapes to address or identify the entity from foreign languages and producing new linguistic sign using Chinese components. As in reproduction, production takes the same stages in this process (see Section 6.4.2 below). There are two strategies for both production and reproduction in the process of adapting the foreign concept:

Strategy 1: Internal process — a chain of signals from certain entities is accepted, selected, treated by the subject of reproduction, and the concept of entities is formed by above actions.

Strategy 2: External process — the appropriate linguistic components are chosen by the subject of reproduction, and the concept that materialized and externalized is fixed by the concept of entities through the material shape.

These two strategies will be discussed in detail below in Section 6.5. Here we only concentrate on the overview of word production and reproduction of foreign entities or foreign words.

Reproduction and production (denomination) of the foreign entity in Chinese,
generally speaking, appeared in three ways that were popular among the Chinese intellectual circle throughout history as it was summarized by Zhou Dingyi (1962) and Shi Youwei (2000). Firstly, it is improvised, usually, by indigenous morphemes or sounds on the basis of certain feature of foreign entities or concepts, given them a name. For instance, zilaihuo 自来火 (self, coming, fire [automatic mortar or matches or gas-lamp]), gangbi 钢笔 (steel, pen [fountain pen or pen]), shujia 暑假 (heat, holiday [summer vacation]). Secondly, it is described by a few specific characters, such as hu 胡 (foreign), yang 洋 (foreign), fan 番 (foreign, barbarian), xi 西 (western). For example, hutao 胡念 (walnut), huluobo 胡萝卜 (carrot); yangbaicai 洋白菜 (cabbage), yancong 洋葱 (onion); fanqie 番茄 (tomato), fanshu 番薯 (sweet potato); xizhuang 西装 (western-style clothes), xigua 西瓜 (water melon) and so on. Thirdly, it is translated or transliterated from the sound and pronunciation when some features of foreign words or foreign entities could be not conveyed through the semantic translation and phonetic transliteration or there is not enough time and thought to produce a new word. There are a lot of examples of phonic loans for the last way in modern Chinese, such as sanwenzhi 三文治 (sandwich); tuofu 托福 (TOEFL); suweiai 苏维埃 (Sовет [Soviet]); futejia 伏特加 (вodka [vodka]).

Three traditional and main methods mentioned above existed for two thousand years in Chinese linguistic history. The translation of Buddhism in China started from Han dynasty (206 B.C. — 220 A.D.) when these methods were used and spread (cf. Liang Xiaohong, 1990, 1992; Zhu Qingzhi, 1992). Certainly, the directly
transplantation of foreign alphabets and abbreviation that was used widely in Chinese
writing system happened after 1980s (Li Suogui, 2002). The vocabulary that was
introduced by the third method above, roughly speaking, would be included in
reproduction of foreign words under our observation and investigation, because most
terms that imported from foreign words are either semantic or phonic loans. This
reproduction is the semantic or phonic cognition based on meanings or sounds of
original words.

The second method of adopting foreign entities or concepts can be considered as
cognitive production. This is a simple way to produce the foreign entities: characters
representing meaning ‘foreign’, ‘western’ plus appropriate names. This kind of words
derives from entities which presented before and can be watched by native speakers.
In this sense, it can be accounted also for sensory perceptual production, because the
entity from foreign countries is presented with concrete substances.

The first method fits both for foreign concrete and abstract entities in the word
production as the examples above demonstrated. These examples are considered as a
cognitive production of foreign entities or concepts. Of course, there are semantic
components of foreign words in the examples, such as bi 笔 (pen) in word gangbi
钢笔 (steel, pen [fountain pen or pen]). For the foreign abstract entity, the word
tianzhujiao 天主教 (heavens, religions [Catholicism]) is a good example of
cognitive production for foreign concepts. In addition, the method which produces
new words by foreign entities or concepts develops in the recent years. For example,
hamahang 蛤蟆夯 (frog/toad, rammer/tamper [load rammer]) and hhamajing 蛤蟆
鏡 (frog/toad, glasses [sunglasses, goggles]) which have different meanings in the original language are produced by distinctive properties of that same animal ‘frog’ or ‘toad’. The former that is fixed on the dynamic characteristic of the frog is imitated by the leapfrog movement, and the latter that emerged from the static characteristic of the frog is indicated those who are in sunglasses look like eyes of a frog. Now the problem is that how to define this kind of words in modern Chinese study.

The words as mentioned above are classified with some difficulty as categories of either semantic or phonic loans. This kind of words originates from the same entities, comparing with foreign languages, but their motivation and structure have nothing in common. The Chinese words that left aside the original and made a fresh pattern are called as a cognitive production in this study, from the perspective of denomination, and are identified as foreign-inspired Chinese terms (FICT) as a category of Chinese borrowings under the assumption of the study. This inference could be illustrated with examples: zixingche 自行车/jiaotache 脚踏车 (self, going, vehicle/foot, stepping on, vehicle [bicycle]); gangqin 钢琴 (steel, music instrument [piano]); xiangyan 香烟 (fragrant, smoke [cigarette]); huoche 火车 (fire, vehicle [train]); xiangpi 橡皮 (eraser/rubber, rind [rubber]) and so on. It is clear that the above six Chinese words and five English words have been identical entity but irrelevant linguistic way of expression. Peripheral borrowings (as defined in chapter 4) have been noted in linguistic history for a long time, but previous studies did not focus on the cognitive aspec. Many words produced by this method were thought of as a ‘fabrication’ (Wang Zongyan, 1951/1990: 70).
Some Chinese terms that are dominant in technology and science are produced by both cognitive and translation means, such as *liyuqian* 鲤鱼钳 (carp, fish, pincers/pliers [slip-joint pliers]). The cognitive part refers to the form or figure of the foreign entity and the other part is a semantic borrowing. Besides the form and figure, the exchange of concepts or motivation of forms and figures from the identical entity have been conveyed through the understanding and cognition of the foreign entity, for instance, *pingkouqian* 平口钳 (flat, mouth, pincers/pliers [flat nose pliers]). This kind of term is also a cognitive process.

6.4.2 Sensory Perceptual Production

Sensory perceptual production refers to word production of sensory perceptual experiences for foreign-inspired Chinese terms (FICT). The activity of production for FICT as a category of Chinese borrowings is basically similar to or the same as the word production of Chinese language. As a means of word production, sensory perceptual production is the consequence of indigenous neologisms that are reflecting the socio-cultural development both from inside and outside of China, because indigenous neologisms contain also word production of foreign entities or concepts. Usually, the production is coinage of new words or change of old words to new meanings. Whether it is new words or new meaning, production employs indigenous linguistic components to represent new concepts from other nationalities. Lexical gap is the cause of production for numerous new words and new concepts that have been
appeared as symptoms of social and cultural progress. Lack of appropriate words and expressions in the writing system forms the lexical gap that is in need of the production of new words and new concepts, including exotic ones. This gap is filled by new words and meaning produced by indigenous components.

Some Chinese neologisms are produced by a cognitive semantics approach, in which word production is inspired by foreign entities. Impression is important for Chinese (yellow) people in describing people of different race, for example black people and white people with red hair:

1. **heiren** 黑人 (black, man)
2. **heimianren** 黑面人 (black, face, man)
3. **heifan** 黑番 (black, foreign/barbarian)
4. **heiyi** 黑夷 (black, foreigner)
5. **heiyangren** 黑洋人 (black, foreign, man)

   (Chinese Language Society of Hong Kong, 2002: 104-105)

1. **hongmaofan** 红毛番 (red, hair, foreigner)
2. **hongmaoyi** 红毛夷 (red, hair, foreigner)
3. **hongmao** 红毛 (red, hair)
4. **hongyi** 红夷 (red, foreigner)

   (Gong Yingyan, 1998: 50)
Chinese native speakers would try to choose the character that would best enable the listeners or reader to imagine the right object from an implication of the production. They would choose *heiren* 黑人 (black man) if they thought the profile was to be distinguished from one with yellow people, or *heifan* 黑番 (black foreign [people]) if it was to be distinguished from ones with indigenous people in other foreigners and was used in different context. The terms *heiren* 黑人 (black, man), *heimianren* 黑面人 (black, face, man) and *heiyangren* 黑洋人 (black, foreign, man) are typical in terms of the model ‘distinctive properties + generic name’. In these three words the morpheme *ren* 人 (man) or *yangren* 洋人 (foreign man) is the generic name representing a category that native speakers choose it for identification of the entity.

The color meaning ‘black’ or ‘black face’ in these three examples is the ‘distinctive properties’ denoting the human visual perception when the native speakers meet them and select the appropriate characters to identify them. Other two terms for ‘a person with dark skin, dark curly hair and white teeth’ are *heifan* 黑番 (black, foreign/barbarian [people]) and *heiyi* 黑夷 (black, foreigner) which are an atypical group, because the morphemes *fan* 番 (foreign/barbarian) and *yi* 夷 (foreigner) representing meanings ‘foreign’ or ‘foreigner’ do not identify a category but express the older Chinese usage. Thus, these two terms are exclude from modern Chinese although the morpheme *hei* 黑 (black) represents the meaning ‘distinctive properties’ as sensory perception in the model of FICT.

The examples *hongmaofan* 红毛番 (red, hair, foreigner — ‘the foreigner with red hair’), *hongmaoyi* 红毛夷 (red, hair, foreigner — ‘the foreigner with red hair’),
*hongmao* 红毛 (red, hair — ‘the red hair man’), and *hongyi* 红夷 (red, foreigner — ‘the red foreigner’) mentioned by Gong Yingyan (1998) are used for denoting people who came from Holland to China, particularly in the early seventeenth century. These examples express features of word production in terms of sensory perception. In other words, they reflect the Chinese native speakers’ visual perception of people with the red hair and the red brow. Following the model of FICT, the morphemes *hong* 红 (red) and *mao* 毛 (hair) represent the first element of the model ‘distinctive properties’, which constitute distinct and typical meanings, but in the second element of the model ‘generic name’ the constituents *fan* 番 (foreign/barbarian) and *yi* 夷 (foreigner) representing meanings ‘foreign’ or ‘foreigner’ are not the best choice for a category of a entity, that is, these two constituents cannot identify an entity. It is noted that identifying a category and selecting an appropriate character concern stages of word production in modern Chinese.

The examples listed above suggest that Chinese native speakers’ strategy for word production, character selection divides roughly into two stages according to H. Clark and E. Clark (1977):

Stage 1: to identify the entity to be produced

Stage 2: to select characters appropriate to that identification

These two stages are based on the production of human sensory perception, especially on the visual perception. ‘Identification itself occurs in many circumstances other
than naming, and an organism doesn’t have to talk to be able to identify objects’ (Clark & Clark, 1977: 469). Chinese native speakers, generally speaking, carry out stage 1, entity identification, taking into account stage 2, character selection.

6.5 Sensory Perceptual Systems

Based on the human sensory experience (Evans & Green, 2006: 179) and our observation of examples of foreign-inspired Chinese terms (FICT), we illustrate some sensory perceptual systems as follows:

<table>
<thead>
<tr>
<th>system</th>
<th>sensory experience</th>
<th>physical location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual system</td>
<td>vision</td>
<td>eye, optic nerve</td>
</tr>
<tr>
<td>Haptic system</td>
<td>touch</td>
<td>beneath the skin</td>
</tr>
<tr>
<td>Auditory system</td>
<td>hearing</td>
<td>ear/auditory canal</td>
</tr>
<tr>
<td>Odorous system</td>
<td>smell</td>
<td>nose</td>
</tr>
<tr>
<td>Flavors system</td>
<td>taste/smell</td>
<td>tongue/nose</td>
</tr>
<tr>
<td>Vestibular system</td>
<td>movement/balance</td>
<td>ear/auditory canal</td>
</tr>
</tbody>
</table>

Although all types of sensory-conceptual mechanisms above concerning human experience have applied in psychology and in cognitive semantics, they can explain the motivation (source and reason) of production for FICT in Chinese borrowings. The way and means of the production of neologisms with sensory perception have
been a long history in Chinese linguistics (Song Yongpei & Duanmu Liming, 1993). The strategy of the production by sensory experience, under our observation, is merit not only for naming new entities that emerged in indigenous circumstance, but also for naming new entities imported from foreign nationalities or countries. The process of word production is much the same but with minor differences between naming indigenous entities and naming foreign entities. The minor difference is that when Chinese native speakers name the foreign entity, they think over how to get the name for that, reviewing the inherent morphemes.

The examples of foreign-inspired Chinese terms which connected with sensory experience can be categorized as visual, haptic, auditory, odorous, flavors and vestibular subclasses as follows:

Visual: 1/ color—*huangyou* 黄油 (butter)

2/ shape—*renzini* 人字呢 (herringbone)

3/ shape-color—*huaqigu* 花旗国 (‘the United States’)

Haptic: 1/ wet or dry—*binggan* 饼干 (biscuit)

2/ soft—*ruanmusai* 软木塞 (cork)

3/ hot—pain—*huojiu* 火酒 (alcohol)

Auditory: 1/ *shuoyinji* 收音机 (radio receiving set)

2/ *liushengji* 留声机 (gramophone)
Odorous: *biyan* 鼻烟 (snuff)

Flavors: *xiangcai* 香菜 (coriander)

Vestibular: *yaobaiwu* 摇摆舞 (disco)

6. 5. 1 Visual Foreign-inspired Chinese Terms

Visual foreign-inspired Chinese terms (FICT) refer to some Chinese words produced by the perceived color and vision of foreign entities or concepts. This kind of foreign-inspired words, strictly speaking, does not correspond to foreign original words on structure and form, but follows certain cognitive motivation of word production such as color, shape, shape-color, shape-size of foreign entities when it imported into Chinese (see Chapter 5). According to principles of cognitive semantics that conceptual structure reflects embodied experience and that semantic structure reflects the conceptual structure, we examine the sensory perceptual experience in word production of FICT respectively in detail.

6. 5. 1. 1 Color

Berlin and Kay (1969; Kay, 1975) discovered that the color naming is far from
arbitrary as opposed to the popular opinion that languages divided up the color spectrum arbitrarily at that time. Similarly, Chinese color terms, particularly foreign-inspired Chinese terms pertaining to visual perception are motivated in terms of their formulation of color naming. The motivation of production for foreign entities derives directly from concrete entities or concepts based on the human visual sense of color. Consider this motivation of word production with examples: baidagua 白大褂 (white, big, gown — doctors overall [coat]); baimianer 白面儿 (white, flour — heroin); huang naiyou 黄奶油 or huangyou 黄油 (yellow, milk, oil or yellow, oil — butter); qingmeisu 青霉素 (green, fungi, element — penicillin) etc. These five words are produced by color representation of foreign entities. When native speakers observe these entities, they connect them with color concept in their mind; then they tried to name entities with indigenous color characters. This process of word production is the same with the strategies and stages mentioned above in Section 6.4.1 and 6.4.2. According to that strategy, there are internal and external processes for production of foreign entities or concepts. The internal process denotes that the subjects of production accept, select and treat a chain of signals from certain entities and the concept of entities is formed by these actions. The external process means that the subjects of production choose the appropriate linguistic components and the concept of entities is fixed by material shape. In terms of these processes, illustrating with the example huangyou 黄油 (yellow, milk, oil or yellow, oil — butter), Chinese native speakers accept the signal of color and select it as yellow after identifying the category ‘oil’. Except this example, others like baidagua 白大褂 (white, big, gown
doctors overall [coat]), baimianer 白面儿 (white, flour — heroin) and qingmeisu 青霉素 (green, fungi, element — penicillin) also follow this strategy. The English terms ‘doctors overall’, ‘heroin’ and ‘penicillin’ are identified respectively as the categories ‘gown’, ‘flour’ and ‘element’, then the color names are added to them as ‘white’ and ‘green’, which are accepted, selected and treated by native speakers in terms of sensory perception of concrete entities.

In the semantic structure, these five examples are coincided with the model of foreign-inspired Chinese terms as well. The morphemes gua 褂 (gown), mian 面 (flour), you 油 (oil) and su 素 (element) as a ‘generic name’ of the model represent the category of foreign entities. But the constituents baida 白大 (white, big), huangnai 黄奶 (yellow, milk), and qingmei 青霉 (green, fungi) as the ‘distinctive properties’ of the model express perceptual features of foreign counterparts, which reflect native speakers’ sensory perception of the English terms ‘doctors overall’, ‘heroin’, ‘butter’ and ‘penicillin’.

It is necessary to note that there are coexistent forms of phonic loans for the words qingmeisu 青霉素 (green, fungi, element — penicillin), huangnaiyou 黄奶油 or huangyou 黄油 (yellow, milk, oil or yellow, oil — butter) and baimianr 白面儿 (white, flour — heroin). In other words, the phonic loans such as pannixilin 盘尼西林 (penicillin), baituoyou 白脱油 (butter), and hailuoyin 海洛因 (heroin) are parallel to the foreign-inspired Chinese terms in modern Chinese. The term baidagua 白大褂 (white, big, gown — doctors overall [coat]) has no counterpart in phonic borrowing, and there is no phonic loan of the term baidagua 白大褂 (doctors overall
[coat]) in different dictionaries in modern Chinese. This is a pure foreign-inspired Chinese term which is produced by sensory perceptual experience.

6. 5. 1. 2 Shape

The shape which realized by human visual sense refers to contour, appearance and external form of foreign entities. Once foreign entities or concepts are represented by different shape, or the foreign entities are put before Chinese native speakers, particularly linguists, translators and interpreters, they often try to name those entities with native concepts and characters. As we have seen above, comparing with old words, native speakers produce words for new foreign entities with sensory perception. It is noted that the process of word production seems to be not simple; in fact, native speakers have to possess sensory perceptual experience of foreign entities or concepts. That is, they replace the foreign entities or concepts with basic familiar patterns or shapes in Chinese culture. For instance, the Chinese terms jinzita 金字塔 (gold, character-shaped, tower — pyramid), renzini 人字呢 (man, character-like, woolen cloth — herringbone), liuyedao 柳叶刀 (willow, leaf-like, knife — lance) and matibiao 马蹄表 (horse, hoof, clock — alarm [desk] clock) are produced according to appearance or contour of the foreign entities, expressing in the English terms ‘pyramid’, ‘herringbone’, ‘lance’ and ‘alarm clock’. These Chinese adaptations accurately convey the characteristic features of foreign entities, so that native speakers consider them as indigenous words and do not connect them with foreign
sources. In the first two foreign-inspired words *jinzita* 金字塔 (gold, character-shaped, tower — pyramid), *renzini* 人字呢 (man, character-like, woolen cloth — herringbone), the morphemes *jin* 金 (gold) and *ren* 人 (man), representing shape or contour of ‘pyramid’ and ‘herringbone’ respectively, draw a profile of concrete entities with Chinese individual pictographic shapes, and the pattern of these two individual characters *jin* 金 (gold) and *ren* 人 (man) are coincided with typical model of each entity in question. In the latter two foreign-inspired words *liuyedaol* 柳叶刀 (willow, leaf-like, knife — lance) and *matibiao* 马蹄表 (horse, hoof, clock — alarm [desk] clock), the foreign figure induces Chinese intrinsic concept — *liuye* 柳叶 (willow’s leaf) and *mati* 马蹄 (horse’s hoof). As the pattern of entities, the shape of ‘lance’ and ‘alarm [desk] clock’ reflects the contour of a willow’s leaf and a horse’s hoof, respectively. The Chinese adaptation is employed as a portrait of entities, and this adaptation is associated with the direct perception through the visual sense.

Ungerer and Schmid’s experiential view of language (1996) claims that the experience of concrete and understandable entities is the basis of knowing more complex concept and abstraction. This claim can be verified by the examples *liuyedaol* 柳叶刀 and *matibiao* 马蹄表. It is interesting to note that native speakers set up a link between quite different entities: willow’s leaf and ‘lance’, horse’s hoof and ‘alarm clock’. This link is a sensory perception of external form such as shape, appearance, contour of foreign and indigenous entities based on human perceptual experience of concrete and understandable entities. As we mentioned early, the
human experience derives from sensory perception and concerns perceptual data derived from the external world. The morphemes liuye 柳叶 ‘willow’s leaf’ and mati 马蹄 ‘horse’s hoof’ reflect an experience of native speakers’ agriculture.

From the perspective of word structure, the examples of shape jinzita 金字塔 (gold, character-shaped, tower — pyramid), renzini 人字呢 (man, character-like, woolen cloth — herringbone), liuyedao 柳叶刀 (willow, leaf-like, knife — lance) and matibiao 马蹄表 (horse, hoof, clock — alarm [desk] clock) follow the model of FICT. The morphemes ta 塔 (tower), ni 呢 (woolen cloth), dao 刀 (knife) and biao 表 (clock) represent the category of the entities, which situates at the second part of the model ‘generic name’. Other morphemes like jinzi 金字 (gold, character-shaped), renzi 人字 (man, character-like), liuye 柳叶 (willow, leaf-like) and mati 马蹄 (horse, hoof) which situate at the first element of the model ‘distinctive properties’ represent the characteristic features of the entities and they can distinguish from other entities.

In addition, there are some examples that can be considered also as the type of word production of physical shape in foreign-inspired Chinese terms. As we have discussed above, these kinds of words are motivated by human visual perception of foreign entities. To be more precise, an attention to foreign entities or concepts gives rise to FICT word production of FICT. For example, the words hejingcheng 鹤颈秤 (crane, neck, balance/steelyard [crane]), lianyiqun 连衣裙 (link, clothing, skirt [платье {dress}]) and daishu 袋鼠 comprise an attentional component of word production in the process of adapting the corresponding foreign entities under our
observation. Chinese native speakers choose morphemes *dai* 袋 (pouch), *lianyi* 连衣 (joined dress) and *hejing* 鹤颈 (crane neck) to represent the characteristic features of foreign entities like ‘kangaroo’, ‘платье (dress)’ and ‘crane’. These features are realized by ‘attentional view’ (Ungerer & Schmid, 1996: xiii) of entities. According to Ungerer and Schmid (1996), the attentional view assumes that ‘what we actually express reflects which parts of an event attract our attention’ (p. xiii). It uses attention allocation to explain why one stage of an event is expressed in how we talk about it while this is not so with other stages. In the process of word production for entities ‘kangaroo’, ‘платье (dress)’ and ‘crane’, parts which attract our attention are appearance of entities. In other words, the property of entities motivates renaming of foreign words.

Obviously, the constituent *he* 鹤 ‘crane’ from the term *hejingcheng* 鹤颈称 (crane, neck, balance/steelyard [crane]) is a semantic translation in terms of the original word meaning of this foreign-inspired Chinese term. However, the morpheme *he* 鹤 ‘crane’ representing the original meaning as whole only serves as a part of FICT *hejingcheng* 鹤颈称 (crane, neck, balance/steelyard [crane]), where this denotes ‘machine for moving heavy weights’. The term *lianyiqun* 连衣裙 (link, clothing, skirt [платье {dress}]) is connected with the phonic loan *bulaji* 布拉吉 (платье [dress]), which was widely used in mainland China in 1950—1960s. Later, the term *lianyiqun* 连衣裙 (платье [dress]) replaced the phonic loan and went into the Chinese lexicon.
5. 6. 1. 3 Shape-color

Shape-color refers to some examples of foreign-inspired Chinese terms that are motivated by two parts: shape and color of foreign entities. Among these two parts the FICT implies the color concept or meaning of entities, but the shape is prominent in terms of word meaning of new production for foreign entities. Consider it with examples: *huaqiguo* 花旗国 (color-pattern, flag, country — the United States); *xuehuagao* 雪花膏 (snowflake, cream [vanishing cream]); *wanhuatong* 万花筒 (ten thousand, shape/pattern, tube — kaleidoscope). It is obvious that these three terms are produced by Chinese native speakers through visual sense and provoked by different colors, adhering to surface or inside of foreign entities. The Chinese constituents *huaqi* 花旗 (color-pattern, flag), *xuehua* 雪花 (snowflake) and *wanhua* 万花 (ten thousands, shape/pattern) in FICT examples above imply a shape with the diversity of color, and they can induce fantastic reveries after native speakers read and pronounce them. In other words, this imagery production which derived from Chinese constituents is on the basis of the shape/pattern and color of foreign entities, such as the national flag of USA, vanishing cream and kaleidoscope. In the process of production, these three terms are motivated directly by a human sense of vision and mind. At the same time, the process of production for them is concerned with the prominence view of linguistic structures proposed by Ungerer and Schmid (1996). The prominence view of linguistic structures denotes ‘aspect of linguistic utterances that goes beyond logical reasoning and objectivity concerns the selection and
arrangement of the information that is expressed’ (Ungerer & Schmid, 1996: xii).

From this point of view, colored patterns ‘stars and stripes’ on the flag of the United States, snowflake-like vanishing cream and thousand patterns in a tube are prominent in the concrete entities, and reflect native speakers’ selection of information on these entities.

According to the model of FICT ‘distinctive properties + generic name’, the morphemes guo 国 (country), gao 膏 (cream) and tong 筒 (tube) can be regarded as a ‘generic name’ of the categories of foreign entities ‘the United States’, ‘vanishing cream’ and ‘kaleidoscope’ respectively. It is noted that the morpheme gao 膏 (cream) is semantic translation from the original term ‘cream’ and corresponds to the word meaning of the counterpart. The morphemes huaqi 花旗 (color-pattern, flag), xuehua 雪花 (snowflake) and wanhua 万花 (ten thousands, shape/pattern) can be viewed as ‘distinctive properties’, which concentrate on shape-color or pattern of corresponding foreign entities. In addition, it is necessary to note that the morphemes huaqi 花旗 (color-pattern, flag) as a constituent implies the meaning ‘the United States’, ‘America’ or ‘American’ that are used often in Chinese terms such as huaqishen 花旗参 (American ginseng) and huaqi yinhang 花旗银行 (Citibank; the First National City Bank of New York). These collocations not only represent an implication of certain meanings but also reflect a way of sensory perceptual production in modern Chinese.

Visual foreign-inspired Chinese terms are motivated by sensory perceptual production as we have seen above. This production is involved in color, shape,
shape-color of foreign entities or concepts. Apart from this production, human sense of touch can be motivated to produce new words in modern Chinese.

6. 5. 2 Haptic Foreign-inspired Chinese Terms

The haptic examples of foreign-inspired Chinese terms (FICT) refer to those words that derived from perceptual experience of human sense of touch. Under our observation some of the FICT could be divided into three types of human sense of touch as follows:

1/ wet or dry—binggan 饼干 (round flat cake, dried food [biscuit])
2/ soft—ruanmusai 软木塞 (soft, wood, stuff [cork])
3/ hot—pain—huojiu 火酒 (fire, alcohol [alcohol])

These three terms are taken from the list of examples of FICT that are attached at the end of the thesis as an appendix. These terms as examples are typical among the list. These kinds of words are motivated from the feeling beneath the human skin. To be more precise, they are produced by human sense of touch in sensory perceptual experience of foreign entities. For example, the entity ‘alcohol’ is put on anywhere in the human body, people could feel the heat and pain on the skin, just like the fire on the body. Therefore, huojiu 火酒 (fire, alcohol) in the third type is created by people who use and feel it at first. This characteristic feature of ‘alcohol’ which is burning
like ‘fire’ determines the way of word production for the entity. That is, the meaning ‘fire’ (*huo* 火) from the word *huojiu* 火酒 (fire, alcohol) is chosen as a distinctive property of the entity ‘alcohol’.

In the second type, the concept ‘soft’ in the term *ruanmusai* 软木塞 (soft, wood, stuff [cork]) originates from human touching the concrete entity. This is a direct sensory perceptual experience of external world. When people fill the bottle with something, they need to find something soft to pack it. They know that only something soft can stop the bottle. Having this perceptual experience, Chinese native speakers replace ‘cork’ with a term *ruanmusai* 软木塞 (soft, wood, stuff [cork]) on the one hand. On the other hand, the Chinese native speakers had touched the cork outside the bottle, it felt soft and call it *ruanmusai* 软木塞 (soft, wood, stuff [cork]). This is a sensory perceptual production for foreign-inspired Chinese terms.

In the first type, the word *binggan* 饼干 (round flat cake, dried food [biscuit]) is produced by its property which we feel like dry and hard through the touching and eating it. Imagine that Chinese speakers adapt it with morphemes *bing* 饼 (round flat cake) and *gan* 干 (dried food) in terms of their sensory experience of the entity. They employ the existent concept *bing* 饼 (round flat cake) which is a popular food in everyday life of Chinese people, and add a morpheme *gan* 干 (dried food) which represent its property to produce a foreign-inspired Chinese term for the foreign entity ‘biscuit’. It is obviously that the process of word production for three terms above is associated with sensory perceptual experience of human body.

From the perspective of the semantic structure of word production, three
examples are coincided with the model of FICT ‘distinctive properties + generic name’. The morphemes jiu 酒 (alcohol), sai 塞 (stuff) and gan 干 (dried food) as a ‘generic name’ denote the categories of foreign entities ‘alcohol’, ‘cork’ and ‘biscuit’. Among them the meaning jiu 酒 (alcohol) is a semantic translation from original word. But the element of the model for FICT ‘distinctive properties’ is expressed by morphemes huo 火 (fire), ruanmu 软木 (soft, wood) and bing 饼 (round flat cake) derived from motivation of word production, i.e. human sense of touch as sensory perception.

6. 5. 3 Auditory Foreign-inspired Chinese Terms

Auditory FICT relate to embodiment experience derived from human hearing sensory perception. Some examples of FICT are produced directly by human sense of hearing and function. Consider this kind of terms with examples as follows:

- changpian 唱片 (singing, flat thin piece [phonograph record])
- tingzhenqi 听诊器 (hearing, examine, machine [stethoscope])
- liushengji 留声机/huaxiazi 话匣子 (remain, voice, machine/speech, box [gramophone])
- shouyinji 收音机/huaxiazi 话匣子 (receiving, sound, machine/speech, box [radio receiving set])
These examples above are unsurprisingly associated with human sensory perceptual experience. To be more precise, they are motivated by human sense of hearing under our observation. For example, the English terms ‘phonograph record’, ‘stethoscope’, ‘gramophone’, and ‘radio receiving set’ are adapted in turn by Chinese terms changpian 唱片 (singing, flat thin piece), tingzhenqi 听诊器 (hearing, examine, machine), liushengji 留声机/汉语/话匣子 (remain, voice, machine/speech, box), and shouyinji 收音机/汉语/话匣子 (receiving, sound, machine/speech, box), which are connected with the sense of hearing such as the morphemes chang 唱 (singing), ting 听 (hearing), liusheng 留声 (remain, voice), yin 音 (sound) and hua 话 (speech), because the ‘sounds’ which derive from different devices such as phonograph record, stethoscope, gramophone, radio receiving set are received by people through the human ear. From this point of view, these terms belong to the sensory perceptual production for foreign entities. As discussed earlier, this production is based on human perception or recognition of the external world.

The examples above may be considered a functional production of foreign entities or concepts. The functional production derives from the use of foreign entities that were imported into China or after the entities were renamed by native speakers. Compared with sensory perceptual production, the proportion of function in these terms is not prominent according to the motivation of word production under our investigation. For example, if the word shouyinji 收音机/汉语/话匣子 (receiving, sound, machine/speech, box [radio receiving set]) is put stress upon what ‘the set receives’ or what is the ‘box’, then it denotes the ‘sound’ that the machine or
device brings. If that word is put emphasis upon what is it, then it means a machine or
device for receiving sound which represents a function. Obviously, it varies on the
point of emphasis of foreign-inspired Chinese terms. Consider this point with other
examples: *tiwenbiao* 体温表 (body, temperature, timepiece — thermometer); *wendubiao* 温度表 (temperature, timepiece — thermometer) and *hanshubiao* 寒暑表 (cold, heat, timepiece — thermometer). These three Chinese terms derived from
one same English word ‘thermometer’ are renamed by different functions in language
circumstance. The word ‘thermometer’ is called as *tiwenbiao* 体温表 (thermometer,
clinic thermometer) in testing the body temperature for human beings and animals; in
testing the climate it is named usually as *hanshubiao* 寒暑表 (thermometer); and the
*wendubiao* 温度表 (thermometer) is used in the field of industry and scientific
research. It is shown that the same entity can be differentiated by functions that are
formed by the motivation of word production in modern Chinese.

In addition, the term *huaxiazi* 话匣子 (speech, box) is used for adaptation of
two English words ‘gramophone’ and ‘radio receiver’. This is a colloquial and
dialectical term that was popular among the non-intellectual native speakers, which
use the term *huaxiazi* 话匣子 (speech, box) for ‘gramophone’ earlier than for ‘radio
receiver’ (Li Jinxi, 1957; Chinese Academy of Social Sciences, 2001). The examples
of foreign-inspired Chinese terms listed above do not correspond to the structure of
original counterparts, but they follow the model of word production for FICT. The
morphemes *pian* 片 (flat thin piece), *qi* 器 (machine), *ji* 机 (machine) and *xia* 匣
(box) can be viewed as the ‘generic name’ of the model that represent in turn the
categories of foreign entities ‘phonograph record’, ‘stethoscope’, ‘gramophone’, and ‘radio receiving set’. The constituents chang 唱 (singing), tingzhen 听诊 (hearing, examine), liusheng 留声 (remain, voice), shouyin 收音 (receiving, sound) and hua 话 (speech) can express the distinctive properties ‘phonograph record’, ‘stethoscope’, ‘gramophone’, and ‘radio receiver’, composed of perception and function of foreign entities.

6. 5. 4 Olfactory Foreign-inspired Chinese Terms

Olfactory FICT refer to those words that derived from sensory perceptual experience of the human sense of smell. There are not many such words, made directly from sensory perception. Let us take the word biyan 鼻烟 (nose, smoke [snuff]) for example. The exotic substance ‘snuff’ was imported from West into China in 1581 (Li Jinxi, 1957: 31). At first, its name was introduced as many phonic loans (shinahu 士拿乎; shinafu 士那富; xila 西腊), then there was the new term biyan 鼻烟 (nose, smoke [snuff]) by its characteristic feature of smell, because this foreign entity ‘snuff’ is inhaled through the nose and people perceive it by the sense of smell. Apart from this, the smell from ‘snuff’ is also refreshing. Another example is a compound word wuyanmei 无烟煤 (non-smoke coal [anthracite]). When the substance anthracite is burning slowly one can not see the flame but can smell the smoke. The morphemes wuyan 无烟 (non-smoke) that conveys potential features of the entity are expressed by human sense of smell as a sensory perceptual motivation.
for word production. Obviously, human senses of vision and smell play an important role in word production for FICT, because the native speakers do not watch the smoke and can smell it as the term *wuyanmei* 无烟煤 (non-smoke coal [anthracite]) implies.

The term *biyan* 鼻烟 (nose, smoke [snuff]) actually appears like a prefect word in terms of structure and meaning in the Chinese language, by comparison with phonic loans, so that native speakers would no doubt believe it is an indigenous word. In a FICT semantic model, *biyan* 鼻烟 accords with the model ‘distinctive properties + generic name’, where the morpheme *yan* 烟 (smoke) is a ‘generic name’ representing the category of the exotic entity ‘snuff’, whereas the morpheme *bi* 鼻 (nose) can denote the ‘distinctive property’ that distinguishes it from other entities or concepts in Chinese.

The word *wuyanmei* 无烟煤 (non-smoke coal [anthracite]) also follows the semantic model of FICT. The morpheme *mei* 煤 (coal) is the ‘generic name’ of the category of foreign entity ‘anthracite’. The morphemes *wuyan* 无烟 (non-smoke) represent the characteristic features of that entity ‘anthracite’ which the meaning of features is expressed by ‘distinctive properties’ in the FICT model.

6. 5. 5 Flavor Foreign-inspired Chinese Terms

Flavor FICT relate to human perceptual experience of taste and smell. That means some Chinese words are produced by combined/mixed sensation of smell and
taste. For example, the terms *xiangcai* 香菜 (taste/delicious, vegetable [coriander]) and *xiangsui* 香荽 (taste/delicious, coriander [coriander]) have been named from direct wafts of the delicate smell that sent forth by the entity itself. This natural flavor is the property of the foreign entity. In the process of production for the entity ‘coriander’, the sense of taste is more prominent than sense of smell, because it is for people to eat not to smell, and people feel it delicious when they eat it, while before eating they smell it fragrant. That is why Chinese native speakers chose the morpheme *xiang* 香 (taste/delicious) to represent the natural feature of the entity. And also, it is possible that the words *xiangcai* 香菜 (taste/delicious, vegetable [coriander]) or *xiangsui* 香荽 (taste/delicious, coriander [coriander]) have been substituted finally for the early name *husui* 胡荽 (foreign, coriander [coriander]) (Yu Jianzhang, 1989: 48; Li Jinxi, 1957: 441). The word *husui* 胡荽 (foreign, coriander [coriander]) is less popular than the former word *xiangcai* 香菜 (taste/delicious, vegetable [coriander]) in Chinese.

*Xiangyan* 香烟 (taste/smell, smoke [cigarette]) is also produced by sensory perceptual experience. Because some perfume or spice elements were added in the process of making cigarettes, people enjoy the smell as well as taste, and thus the name *xiangyan* 香烟. This compares with *zhiyan* 纸烟 (paper, smoke [cigarette]) and *yanjuanr* 烟卷儿 (smoke, roll [cigarette]). It seems clear that the perspective of naming is based on human sense of taste after having sensory experience of that entity.

According to the FICT model, the morpheme *cai* 菜 (vegetable), *sui* 荽
(coriander) and *yan* 煙 (smoke) can serve as the ‘generic name’ for the category of the foreign entities ‘coriander’ and ‘cigarette’. However, the morpheme *xiang* 香 (taste/delicious; taste/smell) which has different meanings in the collocation range can be a distinctive property of foreign entities such as ‘cigarette’ and ‘coriander’ in question. This distinction derives from human senses of taste and smell or combined senses that give rise to a functional choice of foreign entities. In this case, the function underlies the sense from other sides not from subjects, for example, when people smoke the cigarette with some perfume, others feel it a good smell and it leads to a nice circumstance. For this case, the morpheme *xiang* 香 (taste/smell) is considered as a functional choice or a functional production for the foreign entity ‘cigarette’.

6. 5. 6 Sensorimotor Foreign-inspired Chinese Terms

Sensorimotor, which refers to complex motor movement of all aspects of human action, is associated with the production of FICT. According to theory of embodied mind (Lakoff & Johnson, 1999), motor schemas consisting of perception, movements and object manipulation of perceptual mechanisms are concerned with concepts of bodily movement, spatial-relations and the structure of action or events. These concepts are about what the body does. The production of some Chinese words arises these concepts, for example *yaobaiwu* 摇摆舞 (swing, dance [disco]), *tuizi* 推子 (pushing + [suffix] [hair-clippers]) and *zhuangsuox* 撞锁 (bump against, lock [spring
lock]). In modern Chinese, the English word ‘disco’ originated from French ‘discotheque’ was borrowed at first as the phonic loans disike 迪斯科, deshigao 的士高 (Liu et al, 1984: 78), and disike 狄斯可 (Guoyu ribao, 1981: 152). It is believed that the example of FICT yaobaiwu 摇摆舞 (swing, dance [disco]) is produced by the dance style, that is, by dancer’s posture and movements. The process of this production of the English word ‘disco’ involves concepts of bodily movement, represented by verbs like swing, and concepts of spatial-relations, released by directions like back, front, left and right.

The morpheme zhuang 撞 (bump against) from the word zhuangsuo 撞锁 (bump against, lock [spring lock]) which has been the semantic loan tanhuangsuo 弹簧锁 (spring lock) represents the sensorimotor movement. Imagine a situation that a door with a spring lock was pushing by human power, the movement of bumping against the spring brings into a sensorimotor in the human mind. This process of closing might reflect perception of vision and space. By inference, the semantic loan tanhuangsuo 弹簧锁 (spring lock) and another translated word tanzi guasuo 弹子挂锁 (spring lock) were replaced by the word zhuangsuo 撞锁 (bump against, lock [spring lock]) which is produced by sensorimotor perception.

Other example of FICT tuizi 推子 (pushing + [suffix] [hair-clippers]) is used widely in colloquial speech, compared with its semantic loan, the more formal and standard form lifa tuijian 理发推剪 (hair cut, push, scissors [hair-clippers]). The morpheme tui 推 (pushing) represents the moving action in either FICT or semantic loan. The motivation of production of FICT for ‘hair-clippers’ comes from their
characteristic movement while functioning, i.e. sensorimotor movement of ‘pushing’
action and function of ‘cutting’ action.

Among three examples above, the terms yaobaiwu 摇摆舞 (swing, dance [disco]) and zhuangsuò 撞锁 (bump against, lock [spring lock]) follow the model of
word production for FICT. The morphemes wu 舞 (dance) and suo 锁 (lock) which
are the generic name for ‘spring lock’, ‘disco’ represent the category of the foreign
entity and concept. These two morphemes are translated semantically from original
meaning ‘lock’ and ‘dancing’, but other morphemes yaobai 摇摆 (swing) and
zhuang 撞 (bump against) from the words yaobaiwu 摇摆舞 (swing, dance [disco])
and zhuangsuò 撞锁 (bump against, lock [spring lock]) are inspired by foreign entity
and concept ‘disco’ and ‘spring lock’. The morphemes yaobai 摇摆 (swing) and
zhuang 撞 (bump against) that are verbal morphemes represent the distinctive
properties in the model of word production for FICT. As have discussed in chapter 5,
the compound word composed of a verb, i.e. yaobai 摇摆 (swing) and zhuang 撞
(bump against) and a noun, i.e. wu 舞 (dance) and suo 锁 (lock) can formed of a
complex compound word as whole such as yaobaiwu 摇摆舞 (swing, dance [disco])
and zhuangsuò 撞锁 (bump against, lock [spring lock]). Other example tuizi 推子
(pushing + [suffix] [hair-clippers]) does not follow the semantic model of FICT,
because it is atypical in word production and it is considered as a derivation (Dong
Xiufan, 2004: 84). In other words, the morpheme tui 推 (pushing) denotes a
‘distinctive property’, whereas the zi 子 (suffix) is only a word-forming affix in the
foreign-inspired Chinese term.
This chapter explored the way of word production with sensory perceptual experiences. Firstly, the relationship of cognition and language was examined. It was assumed that language is inseparable from cognition. Cognition goes prior to language and determines the development of language. Language can help human beings with better thinking and understanding of new things. Knowing and naming a new thing is a matter of defining a category through the cognitive process. Embodiment of cognition occupied part of this chapter, which reviewed the embodiment in psychologist development. Secondly, the process of creation, acquisition, usage and understanding of language was introduced, as well as structural models of linguistic knowledge concerning mind within cognitive semantics. Finally, human sensory perceptual experiences were examined in production and reproduction of foreign entities and foreign words in modern Chinese. In the analysis of FICT, it was demonstrated that sensory perceptual experiences play an important role in making new words and that FICT uses a direct and simple method for FICT. The method of word production with sensory perceptual experiences follows rules of Chinese word formation in terms of the FICT model. Certainly modern Chinese has other methods of word production, metaphorical production, which will be analyzed in the next chapter.
Chapter Seven
Metaphorical Production

7.1 Introduction

Metaphorical production of foreign-inspired Chinese terms follows on from the discussion of sensory perceptual production in Chapter Six. In linguistic history, metaphor has been studied within the discipline of rhetoric developed in ancient Greece with its use of persuasive devices. One of these was metaphor, where one approach is characterized by the schematic form: A is B, as in *Achilles is a lion*. Metaphor since the time of Aristotle has been identified with implicit comparison and referential transfer (Evans & Green, 2006; Seto, 1999).

Concepts from conceptual metaphor theory can help explain some FICT word production phenomena. Conceptual metaphor theory was set down by Lakoff and Johnson (1980) in the last two decades of the twentieth century. Section 7.2 discusses concepts from conceptual metaphor theory—literal and figurative language, domains, mappings, conceptual structure, resemblance and image schemas. Section 7.3 examines the methodology of FICT metaphorical production, and attempts a categorisation of orientational, image and conceptual in FICT metaphorical production.
7. 2 Relevant Concepts of Metaphors for Foreign-inspired Chinese Terms

7. 2. 1 Literal and Figurative Language

Figurative language refers to expressions where the intended meaning is something other than their literal meaning and can be understood on the basis of generally applicable principles of meaning extension (Cruse, 2006: 63). On the other hand literal language is traditionally defined in terms of four kinds of meaning (Gibbs, 1994: 75):

Conventional literality, where literal usage is contrasted with poetic usage, exaggeration, embellishment, indirectness, and so on.

Non-metaphorical literality, or directly meaningful language, in which one word (concept) is never understood in terms of a second word (or concept).

Truth conditional literality, or language that is capable of ‘fitting the world’ (that is, referring to objectively existing objects or of being objectively true false).

Context-free literality, in which the literal meaning of an expression is its meaning [independent of any communicative situation].
The literal and figurative, or non-literal languages which concerned also by Lakoff (1986) differ from each other in terms of traditional linguistic definitions above. A common point of view is that there is a stable and unambiguous notion of literality, and a sharp distinction to be made between literal and figurative languages (Evans & Green, 2006). Thus literal language is readily understood, while figurative language is more difficult to understand, especially in literature. The distinction between literal and figurative meanings may be easier to make than it is to describe. Typical formulations of this distinction have been concerned with distinguishing between conventional and non-conventional meaning (Davies, 1995), between truth-conditional and non-truth-conditional meaning (Gazdar, 1979), and between context-independent and context-dependent aspects of meaning (Katz, 1977). Cognitive linguist and cognitive psychologist Raymond Gibbs (1994) found no evidence for a principled distinction between literal and figurative language. Coulson and Oakley (2005) assumed that distinctions based on conventionality, truth conditions, and context-independent each divide up the landscape of meanings differently, and none does so in a way that conforms to pre-theoretical intuitions about literal and figurative language.

The key difference between the contemporary theory of metaphor and the classical theories, as Lakoff (1994) pointed out, derives from the literal/figurative distinction. The contemporary theory of conceptual metaphor underlies the current conceptual system and language (Lakoff, 1994; Yu Ning, 1998). This contrasts with a
view of traditional theory that metaphor and the realm of everyday language were mutually exclusive. Metaphor in classical theory was defined as ‘a novel or poetic linguistic expression where one or more words for a concept are used outside of its normal conventional meaning to express a similar concept’ (Lakoff, 1994: 42). As to the distinction between contemporary and classical theories of metaphor, Lakoff and Johnson (1980) wrote:

Metaphor is for most people a device of the poetic imagination and the rhetorical flourish—a matter of extraordinary rather than ordinary language. Moreover, metaphor is typically viewed as characteristic of language alone, a matter of words rather than thought or action. For this reason, most people think they can get along perfectly well without metaphor. We have found, on the contrary, that metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature (p. 3).

Lakoff and Johnson (1980) here redefine the notion of metaphor. They suggest that human thought processes are largely metaphorical, and the human conceptual system is metaphorically structured. Furthermore, Lakoff (1994) assumes that metaphor is not only a way of linguistic expression, but also a way of mental conceptualization: ‘the locus of metaphor is not in language at all, but in the way we conceptualize one domain in terms of another’ (Lakoff, 1994: 42). Metaphor is characterised by such
cross-domain mappings. And everyday abstract concepts such as time, states, change, causation, and purpose can turn out to be metaphorical.

7.2.2 Domains

A domain in conceptual metaphor theory is a body of knowledge that organizes related concepts. Any coherent body of conceptual content serves as an essential background for some individual concept or conceptual process (Lakoff & Johnson, 1980). 'Domains are necessarily cognitive entities: mental experiences, representational spaces, concepts, or conceptual complexes’ (Langacker, 1987: 147). In conceptual metaphor theory, comains are divided into a source domain, the source of the literal meaning of the metaphorical expression, and a target domain, with the metaphor actually describing the domain of the experience (Croft & Cruse, 2004). Evans and Green (2006) find that these domains are involved in the theory of frame semantics in four important aspects. Firstly, concepts can be structured in terms of multiple frames or domains and this is actually the typical arrangement. The range of domains that structure a single lexical concept is called the domain matrix of that concept. Secondly, according to Langacker (1987), there is an additional level of conceptual organization which was not explicitly worked out within the theory of frame semantics. This relates to the distinction between basic domains and abstract domains. This distinction derives from the notion of embodiment or experiential grounding. Some basic domains referred to space and time derive directly from the
nature of our embodied experience, other domains such as marriage, love, or medieval musicology are more abstract. Abstract domains are more complex than basic domains in nature. Embodied experiences and socio-cultural experiences constitute the abstraction of domains (Evans & Green, 2006: 231). Thirdly, a particular lexical concept can simultaneously presuppose a domain lower down the level of hierarchy and represent a sub domain for a lexical concept further up the level of hierarchy. That is, a concept of the part of body like the elbow is understood with respect to the domain ‘arm’, and the concept ‘arm’ is understood with respect to the domain ‘body’. Finally, there is a difference between frame semantics and the theory of domains in development. Fillmore and others (1992) view frames as a means of accounting for grammatical behavior, while Langacker (1987) and Taylor (2002) focus on the conceptual ontology, i.e. the structure and organization of knowledge, and the way in which concepts are related to and understood in terms of others (Evans & Green, 2006: 230-231).

Take a metaphor LOVE-IS-A-JOURNEY for example. There are two concepts as the terminology in this metaphor. Generally, the starting-point or described concept as LOVE in LOVE-IS-A-JOURNEY is often called the target domain, while the comparison concept or the analogy as JOURNEY is called the source domain (Saeed, 2003). The pattern LOVE-IS-A-JOURNEY is viewed by Lakoff and Johnson (1980) as a conventional link at the conceptual level between the domain of LOVE RELATIONSHIPS and the domain of JOURNEYS. According to Lakoff and Johnson, LOVE is conventionally structured in terms of JOURNEYS. This association is called a conceptual metaphor: what makes it a
metaphor is the conventional association of one domain with another. What makes it conceptual is the idea that the motivation for the metaphor resides at the level of conceptual domain (Lakoff & Johnson, 1980). In this vein, linguistic expressions that are metaphorical in nature are simply reflections of an underlying conceptual association. In addition, the source and target domains possess a number of distinct roles. In the source domain, JOURNEYS include TRAVELLERS, a MEANS OF TRANSPORT, a ROUTE followed, OBSTACLES along the route and so on. Similarly, the target domain LOVE RELATIONSHIP includes LOVERS, EVENTS in the relationship and so on. The metaphor works by mapping roles from the source onto the target: LOVERS become TRAVELLERS (We’re at a crossroads), who travel by a particular MEANS OF TRANSPORT (We’re spinning our wheels), proceeding along a particular ROUTE (Our relationship went off course), impeded by obstacles (Our marriage is on the rocks). As these metaphors show, a metaphorical link between two domains comprises a number of distinct mapping or correspondences (Evans & Green, 2006). Source and target domains can be involved in conceptual metaphor, and source and target concepts may be conceptualized in multiple construals—basically a cognitive act of imposing some sort of structure on a body of conceptual content such as profiling a portion of a domain. Different construal of a source or target may then lead to multiple versions of a conceptual metaphor. Some source domains may have clearly distinct construal, and these differences in the way we think about the source may be responsible for creating alternative conceptual metaphors (Kövecses, 2005). The terms ‘source and target domain’, popular in contemporary metaphor theory, are adopted in this study.
7. 2. 3 Mappings

A mapping connects entities in one conceptual region with another (Evans & Green, 2006: 367). In their key works on conceptual theory of metaphor, Lakoff and his colleagues use evidence from everyday conventional linguistic expression to deduce the existence of metaphorical mappings between conceptual domains in the human mind ((Lakoff & Johnson, 1980; Lakoff & Turner, 1989; Lakoff, 1987, 1994); Croft & Cruse, 2004:194). Their primary goal in developing the conceptual theory of metaphor is to reveal these metaphorical mappings between domains and how they have guided human reasoning and behavior (Croft & Cruse, 2004: 194). As mentioned above, the feature of conceptual theory of metaphor is that the metaphor is not a property of individual linguistic expressions and their meaning, but of whole conceptual domains. Any concepts from source domain can be used to describe a concept in the target domain. A conventional metaphor is a conceptual mapping between two domains. The mapping is asymmetrical: the metaphorical expressions profile a conceptual structure in the target domain, not the source domain. To explain the relations of domains and mappings, Lakoff (1993: 208) points out:

What constitutes the LOVE IS A JOURNEY metaphor is not any particular word or expression. It is the ontological mapping across conceptual domains, from the source domain of journeys to the target domain of love. The
metaphor is not just a matter of language, but of thought and reason. The language is secondary. The mapping is primary, in that it sanctions the use of source domain language and inference patterns for target domain concepts. The mapping is conventional; that is, it is a fixed part of our conceptual system, one of our conventional ways of conceptualizing love relationships (p.208).

There is an adjective ‘ontological’ to modify the word ‘mapping’ in the passage above. This adjective represents a category of conceptual mapping in contemporary theory of metaphor. Lakoff argues that the mapping between source and target domains involves two types of correspondences, ontological and epistemic. Ontological correspondences are ‘between the entities in the source domain and the corresponding entities in the target domain’, while epistemic correspondences are ‘correspondences between knowledge about the source domain and corresponding knowledge about the target domain’ (Lakoff, 1987: 387). In other words, the ontological correspondences that constitute the LOVE IS A JOURNEY metaphor map the ontology of travel onto the ontology of love; epistemic correspondences map encyclopedic knowledge about travel onto knowledge about love (Lakoff 1987, 1993).

The mappings in conventional metaphors are a fixed relation or pattern of conceptual correspondence across conceptual domains. In this case, the mapping defines an open-ended class of potential correspondences across patterns of inference. ‘When activated, a mapping may apply to a novel source domain knowledge structure
and characterize a corresponding target domain knowledge structure’ (Lakoff, 1993: 210).

In relation to the motivation of metaphors, Lakoff (1993) assumed that mappings between domains should not be viewed as processes of relations between inputs and outputs of source and target domains. The mappings, instead, should be considered as a stable relation or fixed pattern of ontological correspondences across domains, in which the knowledge structure or lexical item of source domain may be or not used for the mapping. Lexical items as conventional in the source domain are not always conventional in the target domain. That is, lexical items in the source domain may or may not employ the static mapping pattern. If it does, ‘it has an extended lexicalized sense in the target domain, where that sense is characterized by the mapping, if not, the source domain lexical item will not have a conventional sense in the target domain, but may still be actively mapped in the case of novel metaphor’ (Lakoff, 1993: 210).

Another characteristic of mappings is that the words used for naming patterns of metaphor are located at the superordinate level of vocabulary. In other words, mappings emerge in the higher than basic level of vocabulary. Lakoff found that a vehicle is a superordinate category including such basic level categories as car, train, boat, and plane in the LOVE IS A JOURNEY mapping, which a love relationship corresponds to a vehicle. Lakoff noticed that the meaning of vehicles directly derives from basic level categories such as car (long bumpy road; spinning the wheels), train (off the track), boat (on the rocks; foundering), plane (just taking off; bailing out).
Generally, a love relationship in LOVE IS A JOURNEY metaphor is conceptualized as a car, and also it conceptualized as a boat, a train, a plane, and so on. This is the superordinate level of ‘vehicle’, not the basic level of ‘car’, that is in the general mapping (Lakoff, 1993).

Conceptual mappings are a prominent theme in cognitive semantics. According to Fauconnir (1997), there are three kinds of mapping operations: schema mappings, pragmatic function mappings, and projection mappings. Schema mappings relate to the projection of a schema or frame onto particular utterances. Lakoff and Johnson (1980) argue that the conventional pattern of conceptual mapping is directly grounded in ubiquitous everyday experience. A relatively detailed knowledge structure derived from everyday patterns of interaction. Pragmatic function mappings are established between two entities by virtue of shared frame of experience. Like metaphor, metonymy, which depends upon an association between two entities so that one entity can stand for the other, is an instance of a pragmatic function mapping. A projection mapping projects structure from one domain onto another. The projection mapping reflects in the metaphor TIME IS THE MOTION OF OBJECTS, where TIME is conceptualized in terms of MOTION. Temporal concepts can not undergo literal motion because they are not physical entities. However, these conventional metaphoric mapping allow us to understand abstract concepts like TIME in terms of MOTION (Evans & Green, 2006).

7. 2. 4 Resemblance
Resemblance relates to discernible similarity between the idea and the image. The principle of similarity holds that entities in a scene that share visual characteristics such as size, shape or color will be perceived as belonging together in a group. Rosch and her colleagues found the shapes of entities in a given category were similar when they sought to establish the most inclusive level of categorization. Experiments showed that the entities at the superordinate level are not very similar in terms of shape (compare the outline shapes of car, bus and motorcycle, for example, as instances of the category ‘vehicle’), but entities at the subordinate level are extremely similar. The basic level was shown to the most inclusive level at which the entity shapes are similar (Evans & Green, 2006). Thus the basic level includes much greater number of instances of a category than can be identified at the superordinate level on the basis of shape similarity.

In metaphors, since the time of Aristotle the metaphor has been identified with implicit comparison. While metaphors are based on the comparison of two categories or domains, the comparison seems not to be explicitly marked. The examples *Achilles is as brave as a lion; Achilles is brave, like a lion* are considered traditionally as simile due to use of *as* or *like*, symbols of comparison. Clearly the metaphor *Achilles is a lion* is also based on comparison. This comparison may be described as perceived resemblance. In this case, the resemblance is not physical: Achilles does not actually look like a lion. In the concept or idea of people, lions are seen as the king of the animals and a symbol of courage and ferocity. Metaphors of this kind are labeled as resemblance metaphors (Grady, 1999).
Resemblance metaphors based on physical resemblance are called image metaphors. Image metaphors are ‘one shot’ metaphors: they map only one image onto one other image (Lakoff & Turner, 1989; Lakoff, 1993). This kind of metaphor can map one conventional mental image onto another. Image metaphors differ from other metaphors that map one conceptual domain onto another, often with many concepts in the source domain map onto many corresponding concepts in the target domain (Lakoff, 1993). The following example (poem by Andre Breton, cited in Lakoff & Turner, 1989: 93) illustrates a perceived visual resemblance between the wife's waist and the shape of an hourglass:

My wife … whose waist is an hourglass

This metaphorical image mappings works in the same way as other metaphoric mapping, but the domains are conventional mental image.

Resemblance or similarity of entities can be viewed as a motivation of creation of metaphors. The resemblance works mostly on physical experience. Recognition of resemblance is not only a constraint but also a creative act. which varies with different people and different cultures.

7. 2. 5 Image Schemas

Image schemas are relatively abstract conceptual representations that arise
directly from everyday interaction with and observation of the world (Evans & Green, 2006: 176). Image schemas that structure experience of space can also build concepts in abstract domains. Categories are understood in terms of ‘container’ schemas, time concepts in terms of ‘motion’ schemas, hierarchical structure in terms of ‘part-whole’ and ‘up-down’ schemas, relational structure in terms of ‘link’ schemas, radial structure in categories in terms of ‘centre-periphery’ schemas, foreground-background structure in terms of ‘front-back’ schemas, and so on (Lakoff 1987).

*Image* in psychology relates to sensory perceptual experience of the external world. *Schema* denotes abstract concepts consisting of patterns emerging from repeated instances of embodied experience (Evans & Green 2006). The basic image-schematic concepts like container, link, path, balance, and source-path-goal are meaningful because they are directly mediated and structured in terms of human pre-conceptual experience experience of the world by the human body (Johnson 1987; Lakoff, 1987; Talmy, 1983). According to Lakoff (1987, 1990, 1993) and Johnson (1987). These embodied concepts can be systematically extended to structure more abstract concepts and conceptual domains.

The idea that certain concepts were image-schematic in nature was introduced into contemporary metaphor theory by Lakoff (1987, 1990, 1993) and Turner (1990). They assumed that image schemas could serve as source domains for metaphorical mapping. ‘Image schemas provide particularly important evidence for the claim that abstract reason is a matter of two things: (a) reason based on physical experience, and (b) metaphorical projections from concrete to abstract domains’ (Lakoff, 1987: 275).
Johnson (1987) argued that image schemas structure our experience pre-conceptually, have been the corresponding concepts, and are mapped by metaphors into abstract domains, with their basic logic preserved. In such a sense, ‘the metaphors are not arbitrary but are themselves motivated by structure inhering in everyday bodily experience’ (Lakoff, 1987: 275).

The application of image schema theory to contemporary metaphor theory is that abstract thought and reasoning made by metaphors are considered as having an image-schematic and an embodied basis (Lakoff, 1990). Highly abstract concepts are unlikely to be directly structured in terms of simple image schemas but are more likely to be structured in complex ways by metaphorical mappings (Evans & Green, 2006).

7.3 Metaphorical Production

Metaphorical production is a method of coining terms. It relates to some foreign-inspired Chinese terms (FICT) that are formed of figurative components in modern Chinese: in other words, some FICT are produced metaphorically. Some FICT examples may demonstrate different metaphorical perspectives. Lakoff & Johnson (1980) proposed that there are three types of conceptual domain metaphors: orientational, ontological and structural. But according to the property of metaphorical production for FICT, this study concentrates on three types of metaphors: orientational, image and conceptual.
7. 3. 1 Orientational Metaphors

Orientation concerning concepts of up-down, front-back, left-right, west-east, north-south, near-far belongs to spatial categories (see chapter 5). Concepts of orientation in modern Chinese can be produced metaphorically in the literal meaning of foreign words, in which meanings may be transferred metaphorically or translated semantically. Let us look at some examples of FICT as follows:

(1) up-down:

a. House of Lords *shangyiyuan* 上议院 (up, discussion, court)

b. House of Lords *shangyuan* 上院 (up, court)

c. House of Lords *shanghuitang* 上会堂 (up, meeting, hall)

d. House of Commons *xiayiyuan* 下议院 (down, discussion, court)

e. House of Commons *xiayuan* 下院 (down, court)

f. House of Commons *xiahuitang* 下会堂 (down, meeting, hall)

In the process of word production, Chinese native speakers apply concepts of orientation ‘up-down’ to examples above. The literal meaning which differs from original word meanings is produced metaphorically by orientational lexical items in Chinese. In appearance, these six examples use the meaning ‘up’ or ‘down’, but there is a process of the image schema ‘up-down’ in word production. According to the
The principle of image schemas, having control is up, being subject to control is down (Saeed, 2003: 347). The House of Lords is situated in a control position, whereas the House of Commons at being controlled. The House of Lords has the veto power of resolution proposed by the House of Commons. In modern Chinese, the meaning shang 上 (up) represents a ‘power and influence’ as in the words shangsi 上司 (superior) and shangmian 上面 (higher authorities), while the meaning xia 下 (down) denotes a ‘low position’ as in the words xiashu 下属 (subordinate person) and xiamian 下面 (subordinate) (Xing Fuyi, 2000: 501). These expresses are a spatial metaphor reflecting a power and social relationship in Chinese culture.

In the semantic structure not all Chinese examples above correspond to the original. The meaning of up-down is prominent in metaphorical structure. The concepts of ‘lords’ and ‘commons’ are mapped onto Chinese concepts ‘up’ and ‘down’ just like another English terms ‘Upper House’ and ‘Lower House’ for House of Lords and House of Commons. The terms of Upper or Lower appeared later than Lords and Commons in English under examination of dictionaries. In other words, examples above refer to British Parliament, but if they refer to parliaments of other countries such as Australian, they are might be Upper House or Lower House which could be simply a semantic translation, not a foreign-inspired term in Chinese. Apart from the concepts of up-down, meaning of other parts in the examples basically corresponds to the original meanings, and it has an ontological metaphor which we will discuss later.
(2) left-right:

a. House of Lords zuoyuan 左院 (left, court)

b. revolver zuolun shouqiang 左轮手枪 (left, wheel, hand, gun)

c. revolver zuolun 左轮 (left, wheel)

d. Western Hemisphere zuobanqiu 左半球 (left, half, sphere)

e. Eastern Hemisphere youbanqiu 右半球 (right, half, sphere)

f. House of Commons youyuan 右院 (right, court)

g. House of Commons youyiyuan 右议院 (right, discussion, court)

As in up-down orientation, the concepts of left-right can be coined to new words such as the counterparts of the House of Lords and the House of Commons in Chinese. The image schema ‘left-right’ is similar to schematic meaning ‘up-down’, denoting left is first, right is second (Evans & Green, 2006). The orientation of the left in Chinese culture is ‘up’, ‘high’ or ‘first’, while the right is situated at ‘down’, ‘low’ or ‘second’. For example, the Chinese proverb ‘zuoweishang 左为上 (left is up) and youweixia 右为下 (right is down)’ can represent metaphorically the orientational concepts in Chinese culture. The mapping between the source domain (donor language) and target domain (receiver language) involves conceptual correspondences. The meaning of the left is against to ‘Lords’, the right is to ‘Commons’. This is a metaphorical mapping.

Examples in (2a, f, g) have been replaced by (1a, b, d, e) and are no longer in use, but the pattern of word production can be applied to (2d-e) in terms of the principle of
image schema ‘left-right’ and the concept of traditional culture. It is noted that the first elements of (2d-e), i.e. zuo 左 (left) and you 右 (right), are transferred metaphorically from the original meanings ‘western’ and ‘eastern’. The other morphemes banqiu 半球 (half, sphere [hemisphere]) in (2d-e) are translated semantically from their foreign groups. It is interesting to note that the foreign word ‘revolver’ does not specify the direction of the movement, but the concept ‘left’ occurs in the Chinese counterparts (2b-c).

(3) east-west:

a. rickshaw dongyang che 东洋车 (east, foreign, vehicle)

b. rickshaw dongyang shouche 东洋手车 (east, foreign, hand, vehicle)

c. Japanese dongwen 东文 (east, script/writing)

d. Japanese dongyu 东语 (east, language)

e. Protestantism xijiao 西教 (west, religion)

f. tomato xihongshi 西红柿 (west, red, persimmon)

g. broccoli xilanhua 西兰花 (west, blue, flower)

h. the Gregorian calendar xili 西历 (west, calendar)

These examples concern a group of ‘east-west’ orientational concepts, produced metaphorically with respect to their foreign literal meanings, in particular the concepts of ‘east-west’. Chinese native speakers determine directions in terms of physical experience, that is, the body faces south, with the back to the north (Yang
Lin, 1996). Following this standing pose, their left is east, whereas the right is west, for example, Japan is located at their left hand direction and is called as *dongying* 东瀛 (east, sea/ocean) (Chang Jingyu, 1995: 27). The sunrise in the east and sunset in the west are part of an image schema in an east to west ‘cycle’ (Evans & Green, 2006: 190). The east-west concept, with the east as starting point and the west as destination, is applied to various phenomena and entities by Chinese speakers.

In the examples, the parts of literal correspondences which constitute a semantic translation from original meanings *yu* 语 (language), *wen* 文 (writing), and *che* 车 (vehicle) are viewed as a ‘generic name’ in the model of foreign-inspired Chinese terms. In the examples (3e-h), the entities derived from ‘the west’ are named in metaphorical ways. The ‘west’ in mind of Chinese native speakers originates from orientational concept that the direction of their right hand is west, and also the sunset direction is west according to the image schema ‘cycle’. Thus, they call some entities from Europe and America ‘west’ or ‘west foreign’ as in examples (3e-h): ‘west calendar’ and ‘west religion’ denote the Gregorian calendar and the Protestantism; ‘west red persimmon’ and ‘west blue flower’ indicate the tomato and broccoli. In these four examples, apart from the metaphorical meaning ‘west’, the components *jiao* 教 (religion) in *xijiao* 西教 (west, religion Protestantism), *li* 历 (calendar) in *xili* 西历 (west, calendar — the Gregorian calendar), and *hong* 红 (red) in *xihongshi* 西红柿 (west, red, persimmon — tomato) are translated semantically from foreign meanings. Other constituents *shi* 柿 (persimmon) in the term *xihongshi* 西红柿 (west, red, persimmon tomato) and morphemes *lanhua* 兰花 (blue flower)
in the term *xilanhua* 西兰花 (west, blue, flower broccoli) form a different figurative part in shape or shape-color, which will be discussed later in the section ‘image metaphor’.

(4) in-out:

   a. терпия [tharapy] *neike* 内科 (internal, section)

   b. surgery *waike* 外科 (external, section)

The examples (4) which relate to image schema ‘container’ are produced in figurative ways. The ‘container’ schema (see Figure 7.3.1) consists of the structural elements: interior, boundary and exterior. These are the minimum requirements for a container (Lakoff, 1987). The landmark (LM), represented by the circle, consists of two structural elements: the interior—the area within the boundary—and the boundary itself. The exterior is the area outside the landmark, contained within the square. The container is represented as the landmark because the boundary and the exterior together possess sufficient gestalt properties to make it the figure, while the exterior is the ground (Lakoff, 1987: 271-273).

![Figure 7.3.1 ‘Container’ image schema based on Evans and Green (2006: 181)](image-url)
The container schema can apply to Chinese orientational concepts ‘in-out’. Suppose that a human body serves as a container, in which the divider is skin. The interior is the area within the skin, whereas the exterior is the area outside the skin. According to this principle, Chinese native speakers define the surgery and therapy as waike 外科 (external, section) or neike 内科 (internal, section). Waike 外科 (external, section [surgery]) denotes the medical branch where surgeons can make an operation from outside the skin. This is a figurative way of orientational production in modern Chinese. In fact, most medical operations are on inside parts of the body. By comparison, Chinese native speakers name the section where doctors treat diseases inside the skin is internal as the term neike 内科 (internal, section [терпия {therapy}]). From the perspective of word structure, the examples in (4) do not correspond to the original structures and meanings. The morpheme ke 科 (section) representing a ‘generic name’ in the model of FICT constitutes the figurative way in the meaning ‘branch’ or ‘section’ with respect to the original meaning ‘room in which operations take place’. This generic name implies a category of foreign entities ‘surgery’ and ‘therapy’, while the morphemes wai 外 (external) and nei 内 (internal) represent the ‘distinctive properties’ of the model for FICT.

(5) center-periphery:

a. consonant fuyin 辅音 (auxiliary, sound)

b. vowel yuanyin 元音 (fundamental, sound)
c. consonant ziyin 子音 (son, sound)

d. vowel muyin 母音 (mother, sound)

The concepts of center-periphery are involved in above examples of FICT, representing orientational meanings. The center-periphery schema derives from bodily experience: ‘our bodies having centers—trunk and internal organs, and peripheries—fingers, toes, hair’ (Lakoff, 1987: 274-275). Following this principle, the centers are viewed as more important than the peripheries. The periphery is considered as depending on the center, but not conversely (Lakoff, 1987). The central sounds are vowels while the peripheral sounds are consonants.

In Chinese linguistics, the sound and pronunciation are considered usually as a whole before introduction of Western terms into Chinese. In (5) above, the sound 音 consists of vowel and consonant. In the process of production, (5a-b) and (5c-d) constitute two pairs of corresponding entities in terms of center-periphery schema. Identification of schematic center or periphery is determined by the function of vowel and consonant. Vowels are more prominent than consonants; a vowel can be an independent syllable, whereas a consonant cannot. The vowel is then central, while the consonant is peripheral. In Chinese there is yuan 元 ‘fundamental (vowel)’ and fu 辅 ‘auxiliary (consonant)’, and similarly mu 母 ‘mother (vowel)’ and zi 子 ‘son (consonant)’.

In examples (5), there is a common component of word production, yin 音 ‘sound’, which is a generic name in the FICT model. It retains a literal meaning in
the translated terms, while the metaphorical structure of the examples remains prominent. This is a type of metaphor in the first element of the model of FICT and it will be discussed later in the section ‘conceptual metaphor’.

(6) high-low:

e. aeroplane *tianshang huoche* 天上火车 (the sky, fire, vehicle)

f. God *shangdi* 上帝 (high, emperor)

g. antiaircraft gun *gaoshepao* 高射炮 (high, shoot, gun)

This group of foreign-inspired Chinese terms relates to concepts of orientation ‘high-low’ in modern Chinese. Actually, the concepts of high-low are represented by spatial concepts of up-down. According to Lakoff (1987), the image schemas, such as ‘up-down’, ‘front-back’, ‘link’, ‘container’, ‘source-path-goal’, ‘center-periphery’ etc, can structure our experience of space. The image schemas ‘define most of what we commonly mean by the term *structure* when we talk about abstract domain. When we understand something as having as abstract structure, we understand that structure in terms of image schemas’ (Lakoff, 1987: 283).

These examples in (6) are understood in terms of the principle of image schemas proposed by Lakoff (1987). All terms in (6) made from concepts of mental spaces are metaphorical. A mental space is a medium for conceptualization and thought. Thus any fixed or ongoing state of entities as we conceptualize it is represented by a mental space (Lakoff, 1987: 281). Consider the example (6a), which was taken from Luo
Changpei (1950/1996: 13). Chinese native speakers have seen the train on the land and describe the aeroplane as a term *tianshang huoche* 天上火车 ‘train in the sky’. In appearance, it is a comparison of two entities ‘train’ and ‘aeroplane’, but there is mapping of one domain onto another. In other words, ‘the train’ on the land is mapped onto ‘the aeroplane’ in the sky. This is a mapping of two spatial orientation concepts: high-low, or up-down. Other example in (6b) represented the concept of orientation ‘high-low’ are produced by Chinese native speakers. In their mind, ‘the God’ is conceived as an emperor on heavens: *shangdi* 上帝 (high, emperor). Another example *gaoshepao* 高射炮 (high, shoot, gun [antiaircraft gun]) where reflected meanings of orientation also results in FICT word production from the high-low perspective. Suppose that an aircraft is flying in the sky, that is, it is on the high position. If we attack the aircraft, we must shoot up. There is an image schema ‘up-down’ for the action. In other words, the gun rises from a low position to a high direction. According to this image schema, we call this kind of gun *gaoshepao* 高射炮.

The group of FICT (6) is produced metaphorically in the meaning structure except part of the semantic translation such as ‘vehicle’ and ‘gun’ in (6a, c). The word *shangdi* 上帝 (high, emperor [God]) from this group (6b) is made of metaphors as a whole, other two words (6a, c) belong to half metaphors plus semantic translation. According to the model of FICT word production, the morphemes *che* 车 (vehicle), *di* 帝 (emperor) and *pao* 炮 (gun) as the generic name of the model constitute the category of foreign entities ‘aeroplane’, ‘God’ and ‘antiaircraft gun’. The constituents
*huo* 火 (fire), *tianshang* 天上 (the sky), *shang* 上 (high) and *gaoshe* 高射 (high shoot) represent the distinctive properties of three foreign entities.

Six FICT groups of orientational metaphors in modern Chinese have been examined. Concepts of orientation such as up-down, left-right, east-west, in-out, center-periphery and high-low are motivations of FICT word production in terms of image schemas. Some FICT examples can be produced holistically in figurative ways, some are partial metaphors and some are partial semantic translation.

7.3.2 Image Metaphors

Image metaphors are those metaphors that are based on physical resemblance and which map one image onto another image (Lakoff, 1993). They may map one conventional mental image onto another. Image metaphors differ from other metaphors that map one conceptual domain onto another, often with many concepts in the source domain mapping onto many corresponding concepts in the target domain (Lakoff, 1993), as was discussed in the example *love-is-a-journey*. Image metaphors move one simple image of the entity (source domain) to another (target domain) in terms of physical resemblance.

(7) shape:

a) peaked cap *yashemao* 鸭舌帽 (duck, tongue, cap)

b) cobra *yanjingshe* 眼镜蛇 (glasses, snake)
c) pyramid *jinzita* 金字塔 (gold, character-shaped, pagoda)

The examples in the group (7) are foreign-inspired Chinese terms involving in metaphorical image mapping between two domains with comparison of resemblance. As Lakoff (1993) assumed, metaphorical image mappings work in the same way as all other metaphorical mappings: by mapping the structure of one domain onto the structure of another. In the image metaphor, the domains are conventional mental images. The example *yashemao* 鸭舌帽 (duck, tongue, cap [peaked cap]) is an analogy of the image of a duck’s mouth or beak onto the image of a peaked cap by virtue of their common shape. The shape of the peaked cap in the perception of Chinese speakers bears a resemblance to the figure of a duck’s mouth. In the example *yanjingshe* 眼镜蛇 (glasses, snake [cobra]), the figure of the eyes on a cobra is similar to the shape of a pair of glasses. The shape of the pair of glasses is mapped onto the cobra in the mental image. Another example bearing Chinese culture is the example *jinzita* 金字塔 (gold, character-shaped, pagoda [pyramid]), which the image is created by a shape of the Chinese character looks like the Chinese character *jin* 金, meaning ‘gold’ shape of ‘pyramid’, and is like a *ta* 塔 ‘pagoda’.

These examples (7a-b) constitute partial metaphors: the first half, *yashe* 鸭舌 (duck, tongue/mouth) and *yanjing* 眼镜 (glasses) are metaphorical image mapping. The second half of words (7a-b) are translated from original terms: ‘cap’ is a loan translation, but ‘snake’ (at the generic level of vocabulary in modern Chinese) derives from ‘cobra’, meaning the venomous, hooded snake of Asia and Africa located at a
subordinate level of vocabulary in English. These two words (7a-b) are typical in terms of the model of FICT word production. The morphemes mao 帽 (cap) and she 蛇 (snake) are non-metaphorical elements in the examples (7a-b), while the metaphorical parts (yashe 鸭舌 [duck, tongue/mouth]; yanjing 眼镜 [glasses]) in the examples are formed of distinctive FICT properties. The term jinzita 金字塔 (gold, character-shaped, pagoda [pyramid]) is a typical metaphor from the point of view of semantic structure, and is also typical in the FICT model structure. The constituent ta 塔 (pagoda) as a generic name of the model represents the category of the entity ‘pyramid’, while the morphemes jinzi 金字 (character-shaped) as the distinctive properties distinguish one from other entity.

The constituent shi 柿 (persimmon) in the term xihongshi 西红柿 (west, red, persimmon ‘tomato’) is produced by the shape of foreign entity ‘tomato’, meaning ‘plant with red fruit’, which looks like ‘persimmon’. In terms of this motivation of shape, Chinese native speakers name it as xihongshi 西红柿 (west, red, persimmon ‘tomato’), in which the morphemes xi 西 (west) and shi 柿 (persimmon) are produced by orientational and image metaphors, apart from for the semantic element ‘red’ (hong 红).

(8) shape/color:

a) vanishing cream xuehuagao 雪花膏 (snowflake, paste)

b) aeroplane yinyan 银燕 (silver, swallow)
This group of examples is more complex than (7) in the mapping of two domains. Compared with shape resemblance, the color as a component of perception can be added to make the metaphorical image mapping, so that color together with shape is a medium for image metaphors. Image mapping of shape/color can involve more than mapping of single shape relationships. In group (8), the components *hua* 花 (flower) and *yan* 燕 (swallow) representing physical shape imply a demand of color. Without the color element, mental images have no complete image for mapping entities. Color elements are necessary for image mapping of domains. In the word *xuehuagao* 雪花膏 (snowflake, paste [vanishing cream]), the ‘snow’ modifying the ‘flake’ denotes a white color, and the image of the for ‘vanishing cream’ color is mapped onto the snowflake image. The example *yinyan* 银燕 (silver, swallow [airplane]) is a typical term for image mappings of shape/color, where the aeroplane is conceived as a ‘silver swallow’ in the open air. The shape ‘swallow’ is mapped in mental image onto the shape of aeroplane. The color ‘silver’ is compared with the color of aeroplane. This mapping of color is only an image of the source domain (aeroplane) and the target domain (swallow): it will be a silver color in the mental image of Chinese native speakers. The word ‘aeroplane’, with its sense of ‘heavier-than-air flying machine’, does not say anything about the shape and color, but these are supplied from a conventional mental image.

Group (8) follows the semantic model of FICT. In both examples, there are either distinctive properties such as *xuehua* 雪花 (snowflake), *yin* 银 (silver) or a generic name such as *gao* 膏 (paste); and *yan* 燕 (swallow). The component *gao* 膏
‘paste’ is a semantic translation from the original meaning ‘cream’, while other components xuehua 雪花, meaning ‘snowflake’, are a metaphorical mapping. The example yinyin 银燕 (silver, swallow [aeroplane]) is a full metaphor in the structure, which can be analyzed by the semantic model of FICT whether the generic name is translated or created.

The orientational metaphorical morpheme xi 西 (west) is one part of xilanhua 西兰花 (west, blue, flower 'broccoli'); the other constituents lanhua 兰花 (blue flower) produced also by the metaphorical way ‘shape-color’, which is inspired by the foreign entity ‘broccoli’, meaning ‘a type of cabbage which the tender green stalks are eaten’. Xilanhua 西兰花, composed of orientational metaphor xi 西 (west) and image metaphor lanhua 兰花 (blue flower), forms a full metaphor.

(9) shape-size:

a) van mianbaoche 面包车 (bread, vehicle)

b) potato malingshu 马铃薯 (horse-bell, yam/potato)

c) scalpel liuyedao 柳叶刀 (willow-leaf, knife)

The image shape/size metaphors mean that metaphorical mappings occur both in an image of a shape and size of the source domain and onto an image of shape and size of the target domain. Here it is necessary to note that the mappings of shape imply the mapping of size in mental images. Take the word mianbaoche 面包车 (bread, vehicle [van]) for example. When Chinese native speakers map an image of the
rectangular shape of bread with onto the shape of van, they are constituting the metaphorical image of the van. *Malingshu 马铃薯* (horse-bell, yam/potato [potato]) also involves the image of shape/size, mapped onto the image of shape-size of yam/potato. In the conventional metaphor, the potato looks like ‘horse-bell’ in shape and size; but the shape and size resemblance between the horse-bell and potato is based on the mental image. Chinese native speakers pay attention only to the shape and size of the horse-bell is. They map the image of the shape-size of the horse-bell onto the image of the potato. The third example, *liuyedao 柳叶刀* (willow-leaf, knife) in the group (9) is the word ‘scalpel’, meaning ‘small surgical knife’. The image mapping of ‘the scalpel’ derives from the shape/size of a willow-leaf, which resembles the shape and size of a scalpel in the mental image. This mapping of one image onto another can give rise to knowledge about the first image onto knowledge about the second (Lkoff, 1993).

Examples (9) follow the FICT model of word production. All generic names as components of word production in this group are translated semantically from original words van, potato and scalpel. That is, the components *che 车* (vehicle); *shu 薯* (yam/potato) and *dao 刀* (knife) are translated from the part of literal meanings in foreign counterparts such as ‘covered vehicle’ for van; ‘large edible tuber’ for yam or ‘plant with tuber grown for food’ for potato and ‘small surgical knife’ for scalpel. Other components are the distinctive properties of the model, *mianbao 面包* (bread); *maling 马铃* (horse-bell) and *liuye 柳叶* (willow-leaf) are metaphorical image mappings, which do not correspond to foreign meanings.
7.3.3 Conceptual Metaphors

Conceptual metaphors relate to association between a source domain and a target domain at the conceptual level (Evans & Green, 2006: 295). Generally, all metaphors can fall under the category of conceptual metaphors (Lakoff, 1987, 1993; Lakoff & Johnson, 1980; Lakoff & Turner, 1989). The conceptual metaphor as a specific category underlines more concepts than other categories of metaphors such as orientation and image discussed above. The association as conceptual mappings between the source domain and target domain comprises ontological and epistemic correspondences between the source domain and target domain in terms of Lakoff’s principle (1987).

Conceptual metaphors, like conventional ones, are mappings of two domains, which are involved in concepts of words between foreign languages and receiver language in terms of ontological and epistemic correspondences. The concepts concerning knowledge representation and lexical meaning derive from two linguistic systems. In other words, a comparison or correspondence between the foreign and Chinese languages is based on different concepts from a source language and a target language. The source language as a source domain denotes the foreign language, whereas the target language as a target domain means the Chinese language. Generally speaking, the metaphorical expression profiles a conceptual structure in the target domain, not the source domain (Croft & Cruse, 2004). In other words, the
concept in Chinese is figurative, but literal in foreign languages. There are three subcategories of FICT examples: full metaphors; first element metaphors; and second element metaphors as conceptual metaphors.

(10) full metaphors:

\[ \text{peephole maoyan 貓眼 (cat, eye)} \]

This example is produced in full metaphorical way, which means that all components of the whole word are made in a figurative way. FICT components consist of ‘distinctive properties’ (the first element) and ‘generic name’ (the second element) in the semantic model of word production. In the process of production the whole concept of terms is realized by indigenous lexical meanings, which do not correspond to original ones. \textit{Maoyan 貓眼 (cat, eye)} originates from the English word ‘peephole’, meaning ‘an aperture through which one may peep’. Chinese word ‘cat’s eye’ as an entity with function of seeing is mapped onto the entity of means of seeing. The mapping of the source domain (peephole) and target domain (cat’s eye) can create an association of conceptual level (peeping with eyes or eyes peep). This association is based on a perceived shape of that entity ‘hole’, which resembles \textit{maoyan 貓眼 ‘cat’s eye’}, reflecting the conceptual metaphor.

(11) first element’s metaphors:

\[ \text{week xingqi 星期 (star, period)} \]
The FICT model consists of distinctive properties (first element) and generic name (second element). First element metaphors refer to FICT distinctive properties in a figurative way. From the point of view of the word structure it is partially metaphorical. This part together with another semantic translation part within a word forms a typical FICT. As in group (10), a conceptual association of two domains is crucial in the process of word production. In (11) the word reflects an association between the source domain (foreign meaning) and the target domain (Chinese meaning). Take the word *xingqi 星期* (star, period [week]) for example. The component *xing 星* (star) in *xingqi* is first element metaphor, made figuratively. The Chinese meaning ‘star period’ is mapped onto the English word ‘week’, denoting ‘period of seven days’. In modern Chinese, the meaning *xingqi 星期* (star period) refers to the reunion in the heavens of the Herd Boy and the Weaving Girl (CLSHK, 2002: 287). The conceptual association is that knowledge about the period of seven days (the source domain) corresponds to the knowledge about the meeting days of two stars (the target domain): the mapping results in an epistemic correspondence. The component *qi 期* (period) as the second part of the word *xingqi 星期* (star, period [week]) coincides with the original meaning ‘period’, so that there is a semantic translation and not metaphorical production.

(12) second element metaphors:

Pope *jiaohuang 教皇* (religion/church, emperor)
The second element metaphors relate to some words in which the second element (generic name) of the FICT model is produced in a figurative way. In (12), the semantic structure is composed of literal meaning (distinctive properties) plus figurative (generic name). The metaphorical part as the second element of the model is considered generally as a conceptual metaphor. For instance, the word jiaohuang 教皇 (religion/church, emperor), which is mapped onto the English word ‘Pope’, represents ‘bishop of Rome and head of Roman Catholic Church’. The conceptual association is the component huang 皇 (emperor) as a symbol of superior power in feudal China—corresponding to the head of Roman Catholic Church. The conceptual metaphorical link reflects the mapping of the source domain (head) and the target domain (emperor). The component jiao 教 (religion/church) as the first element of the FICT model is a literal translation, not figurative. In addition, this type ‘semantic translation + metaphorical mode’ (jiao 教 religion/church + huang 皇 emperor) coincides with the model of FICT word production (distinctive properties + generic name). The morpheme huang 皇 (emperor) as the generic name can represent the category of the entity, while the constituent jiao 教 (religion/church) as the distinctive property can distinguish identical entities.

As demonstrated in three subcategories of conceptual metaphors, we found in the process of FICT word production that some components of foreign words can be transferred in a metaphorical mode, while others may be translated from the original literal meaning. These FICT word production properties result in some words with
full metaphors, so that all components in a word are produced figuratively. Thus there is the word *xilanhua* 西兰花 (west, blue, flower [broccoli]), and there are some words with partial metaphors indicating that some components are metaphorical and others are literal translation. These words with partial metaphors are categorized as two types: first element metaphors such as *fuyin* 辅音 (auxiliary, sound [consonant]), *malingshu* 马铃薯 (horse-bell, yam/potato [potato]) and *xingqi* 星期 (star, period [week]); and second element metaphors such as *jiaohuang* 教皇 (religion/church, emperor [Pope]).

In semantic structure, most metaphors gathered in this thesis can be analyzed in terms of the FICT word production model. The word structure may be divided into two parts, distinctive properties (the first element) and generic name (the second element). In this model, metaphorical word production is distinguished as (1) metaphorical component + metaphorical component as in the word *yinyan* 银燕 (silver, swallow [airplane]); (2) metaphorical component + semantic translation as in the word *mianbaoche* 面包车 (bread, vehicle [van]) and (3) semantic translation + metaphorical component as in the word *jiaohuang* 教皇 (religion/church, emperor [Pope]). Some metaphors may not be segmented in terms of the FICT model; it may be difficult to characterise their semantic structure because they have been created by in a particular metaphorical way, for instance, the word *maoyan* 猫眼 (cat, eye [peephole]).

It should be noted that there are many more first element metaphors than second element metaphors in the FICT collection here, and thus first element metaphors
dominate in the investigation.

In summary, this chapter has introduced some principles of conceptual metaphor theory within cognitive semantics. These principles—literal and figurative language, domains, mappings, conceptual structure, resemblance and image schemas—are involved in word production of foreign-inspired Chinese terms. According to these guiding principles, three types of metaphors orientational, image and conceptual have been considered. Firstly, some FICT can be explained by Chinese orientation concepts such as up-down, left-right, west-east, in-out, high-low and center-periphery. Some terms are produced by image resemblance of foreign entities comparison with Chinese indigenous ones such as shape, shape-color and shape-size. Finally, some words were examined that are motivated by particular cultural concepts in FICT word production. In short, the metaphorical approach is inseparable from human bodily or physical experience: human perceptual and cognitive experience is crucial in FICT word production. In addition, the semantic structure or FICT model indicated metaphorical and non-figurative elements in the word.

Metaphorical word production together with perceptual issues forms the FICT word production strategies in this study. These two main strategies will be treated in summary in the Conclusion which follows.
Chapter Eight
Conclusion

8.1 Introduction

This thesis has presented findings on foreign-inspired Chinese terms (FICT) as a particular category of modern Chinese borrowings, with a cognitive semantics approach. This chapter summarises the findings relating to categorization of Chinese borrowings and word production as well as a semantic model. This chapter sums up cognitive treatments of FICT and concludes with a discussion of implications and directions for future research.

8.2 Categorization of Chinese borrowings

Categories of various borrowings in modern Chinese:

Chinese borrowings are classified basically by components of sound, form and meaning in a word borrowed from foreign languages—in other words, the Chinese words represented by the properties of foreign sound, foreign meaning, and foreign form constitute the basis of classification of Chinese borrowings. For example, the term *pannixilin* 盘尼西林 (penicillin), adapted from the English word ‘penicillin’, is considered usually as a phonic loan that reflects the foreign sound according to the
judgment of Chinese native hearers and speakers, though represented by Chinese characters in writing system. There is no dispute over the phonic loan in modern Chinese. However to consider the question of foreign meaning with an example, zaqiu 足球 (football), is an instance of borrowing where the choice of indigenous characters is determined by the meaning and structure of the foreign word. This is called a semantic loan, is used in cases where there is no indigenous word to represent the foreign entity or concept. Another example to express this linguistic phenomenon is the term aiksiguang X 光 (X ray), where the English letter ‘X’ is transplanted directly into Chinese. In this term ‘aiksiguang X 光 (X ray)’, the foreign form ‘X’ together with the semantic element for ‘ray’ forms a mixed word—a loan blend, involving a foreign letter plus foreign meaning. Another three types of loan blends are:

1. foreign sounds plus indigenous generic terms, as in jipuche 吉普车 (lucky, universal, vehicle [jeep]);
2. foreign sounds plus foreign meaning, as in daolinzhi 道林纸 (road, forest, paper [glazed printing paper/Dowling paper]); and
3. foreign meaning plus indigenous generic terms, as in nongchang 农场 (farming/agriculture, place [farm]).

These borrowings retain foreign components in the form of for example (X), sound (jeep) and meaning (paper) which comprise particular elements of motivation for word production.

The term jinzita 金字塔 (pyramid) is classified as ‘semantic translation’ or ‘graphitic translation’ by some Chinese language scholars, or even an autochthonous neologism, but in linguistics literature it is not treated as case of borrowing. From the perspective of Chinese word production, FICT do not borrow any elements from the
sound, form and meaning of foreign words. FICT can be identified in the theory of
categorization as a peripheral category of Chinese borrowing.

The theory of categorization covers one of the most basic human cognitive
activities in comprehending an individual entity and a particular of experience; it can
redefine categories of Chinese borrowings in terms of common and specific attributes
of foreign entities or concepts. Categories of borrowings: can be identified (1) as
attributes of phonic loans, semantic loans, loan blends and FICT according to foreign
sound, form and meaning in Chinese word production. Other attributes may be
foreign properties such as sound, form and meaning can constitute basic attributes of
Chinese borrowings; and apart from these properties, foreign etymology, foreign
concepts and culture, word structure and traces of the history of communication with
other nations can also be attributes (2) to compare these attributes, FICT phonic,
semantic loans, and loan blends have a cluster of common attributes in foreign
concepts (meaning), foreign etymology and foreign culture. These three common
attributes have equal status as borrowings within the category; they share common
attributes with each other, and share a so-called family resemblance (3) in deducing
common attributes, a family resemblance of membership can be a category, while at
the same time a type of entity can be another category. (4) with regard to the
borrowing prototype of Chinese borrowings: based on foreign sounds and word
structure, phonic loans and loan blends are more typical than semantic loans and
FICT. Foreign sounds or word structure designated by Chinese words originate from
foreign words or structure. From this point of view, the more foreign sounds a
Chinese word has, the more representative or central it is. Thus phonic loans and loan blends have more foreign sounds than semantic loans and FICT. Phonic loans and loan blends are considered typical borrowings, while semantic and FICT terms are peripheral.

**Categories of FICT:**

Collected FICT can be categorized as three types in terms of motivations of word production within the cognitive semantics approach: sensory-perceptual, spatial, and functional. FICT word production motivation refers to the prominence of the foreign entity or word meanings, which are reflected in full or part of FICT as compound words. This is the benchmark of distinguishing categorization for the three types of FICT. According to the principle of prominence, the FICT sensory-perceptual category represents the motivation of word production in terms of human senses: visual, hearing, touching, taste, smell and motor movement, concerning colour, shape, shape-color, shape-size, temperature, soft-hard, wet-dry, sounds and so on. Spatial category comprises three kinds of entities: physical, orientational and temporal—FICT word production motivations. A clear contour and three-dimensional space constitute the benchmark of entity categorization for the three kinds of Chinese terms. Although temporal entities do not have physical entity space conditions, they are treated as physical entities because the time depends on the concept of space. The functional category is also concerned with word production motivation, where the function is prominent in word meaning and serves various purposes.
Categorization in the semantic model of FICT:

The formulation here of the FICT semantic model ‘distinctive properties + generic name’ is based on Chinese scholarship (Li Yuming, 1999; Ye Wenxi, 1996; Li Jinxia, 2003; Dong Xiufan, 2004, Packard, 2006). In this model, the ‘generic name’ represents a category of an entity or a concept, and an entity is categorised in terms of understanding the content and nature of entities or concepts; generally the words representing such a category are located at the generic level of the vocabulary. ‘Distinctive properties’ in the model represents prominent and typical features of an entity or concept—distinguished, outstanding and representative characteristic properties. What happens is that an entity is first put into a category, and then the distinctive property distinguishes the entity from other members in the same category. This FICT semantic model can observed in the list of collected words in this study. For example, the daishu 袋鼠 (pouch, rodent [kangaroo]); qingrenjie 情人节 (lover, festival [Saint Valentine’s Day]); banma 斑马 (stripe, horse [zebra]). With the example banma 斑马, after listing all the attributes of the entities concerned — ‘animal’, ‘horse’, ‘donkey’, and ‘deer’ — the attributes can be carefully compared one by one to identify the common and particular attributes of all entities in terms of principles of categorization. Finally, the morpheme ma 马 (horse) (as the second element of the model) and the morpheme ban 斑 (stripe) have more common attributes, and they may be confirmed as typical. In other words, the entity ‘horse’ has more common attributes than other entities such as ‘animal’, ‘donkey’, and ‘deer’ within a category and it is precisely close to the entity ‘zebra’ in the category.
Similarly, the property ‘stripe’ in the entity ‘zebra’ is prominent in comparison with other entities such as ‘variegated’ and ‘happiness’.

The model ‘distinctive properties + generic name’ of nominal FICT is a conceptual pattern of word production. In the model, the function ‘distinctive’ differentiates a similar entity or concept. The function ‘properties’ entails prominence among similar things for cognition. In the model, ‘generic name’ defines a given category of the entity or concept under common perception and cognition of language speakers.

8.3 Cognitive treatments of FICT

Cognitive semantics can explain Chinese linguistic phenomena and reveal the regularity of word production in Chinese borrowings, with theory guiding research. Association and prediction for foreign-inspired Chinese terms have to be tested and verified by a cognitive semantics approach.

All types of Chinese borrowings are motivated cognitively by foreign sound, form and meaning, following Chinese word production principles: foreign components in phonic and semantic loans, or loan blends, are cognitive actions of the external world, with cognition deriving from direct sensory perception. Generally when native speakers hear the foreign sound components in Chinese phonic loans or loan blends, they perceive the sound as different from that of Chinese, and this is a perception or embodied cognition at the sound level of Chinese borrowings. At the
semantic level, the meaning and structure of foreign words are a cognitive basis for understanding Chinese semantic loans and loan blends. In cognitive semantics, a meaning is the conventional ideational or semantic content associated with the symbol. The meaning associated with a linguistic symbol is linked to a concept, which is a particular mental representation.

**Sensory perceptual production:**

Apart from cognition of foreign entities or concepts according to word production principles, FICT are produced by sensory perceptual experience (Johnson, 1987; Mandler, 2004). An example is the term *baimianer* 白面儿 (white, flour [heroin]), which is produced by senses of vision-colour from a sensory perceptual word production perspective. This example does not correspond to the original foreign word in structure and form, or even in word meaning. This is not semantic translation from a concrete counterpart; it is purely a cognitive and functional transformation of colour. Similarly, the term *renzini* 人字呢 (man, character-like, woolen cloth [herringbone]) is motivated by the shape of the entity ‘herringbone’. The form of Chinese characters *renzi* 人字 (man, character-like) represents the ‘herringbone’ shape—a visual FICT motivation. Other sensory-perceptions such as haptic, auditory, odorous, flavors and vestibular senses may also form a motivation of FICT word production. For example, the terms *ruanmusai* 软木塞 (soft, wood, stuff [cork]), *changpian* 唱片 (singing, flat thin piece [phonograph record]), *biyan* 鼻烟 (nose, smoke [snuff]), *xiangyan* 香烟 (taste/smell, smoke [cigarette]), *tuizi* 推子
(pushing + [suffix] [hair-clippers]) are produced in turn by touching, hearing, smell, taste and motor movement based on the principle of Chinese word production.

**Metaphorical production:**

Metaphorical production is a method of coining terms; it relates to FICT formed of figurative components: some FICT are produced metaphorically. Some FICT examples demonstrate different metaphorical perspectives. Lakoff & Johnson (1980) propose three types of conceptual domain metaphors, orientational, ontological and structural. Metaphorical production is realized by metaphorical mappings (Lakoff & Johnson, 1980; Lakoff, 1993; Gibbs, 1994; Kövecses & Radden, 1998; Radden & Panther, 1999; Yu, 1998), where a mapping ‘connects entities in one conceptual region with another’ (Evans & Green, 2006: 367). Metaphorical mappings relating to orientational, image and conceptual metaphors are FICT motivations. Orientational metaphors can be explained by image schemas, which derive from sensory and perceptual experience in interaction with the world. These image schemas are basic conceptual elements contributing to the construal of more complex conceptual structures (Cruse, 2006: 84), and comprising concepts of up-down, front-back, left-right, west-east, in-out, near-far and high-low. Orientational concepts relate to spatial categories, realised by image schemas (Evans & Green, 2006: 190). For example, the term *shangyiyuan* 上议院 (up, discussion, court [House of Lords]) is produced figuratively by the concept of up-down, which derives from the image schema ‘up-down’. The term *xihongshi* 西红柿 (west, red, persimmon [tomato]) can
be seen from the concept of east-west, where sunrise and sunset are part of an image schema in an east to west ‘cycle’ (Evans & Green, 2006: 190). The terms waike 外科 (external, section [surgery]) can be explained by the concept of in-out, which derives from the image schema ‘container’ (Lakoff, 1987). The term fuyin 辅音 (auxiliary, sound [consonant]) is determined by the concept/image schema centre-periphery. Sound (yìn 音) consists of vowel and consonant, categories borrowed from Western languages; identification of schematic center or periphery is determined by the vowel/consonant function. Vowels are more prominent than consonants and a vowel can be an independent syllable, whereas a consonant cannot. The vowel is then central, while the consonant is peripheral.

Image metaphors are based on physical resemblance and mapping one image onto another (Lakoff, 1993). For example, the term yanjingshe 眼镜蛇 (glasses, snake [cobra]) is produced figuratively: the figure of the eyes on a cobra is similar to the shape of a pair of glasses. The shape of the pair of glasses is mapped onto the cobra as a mental image. Another term yìnyàn 銀燕 (silver, swallow [aeroplane]) is a typical term for image mappings of shape/color, where the aeroplane is conceived as a ‘silver swallow’ in the open air. The shape ‘swallow’ is mapped in mental image onto the shape of aeroplane. The color ‘silver’ is compared with the color of the aeroplane. This mapping of colour is only an image of the source domain (aeroplane) and the target domain (swallow), but it will be a silver colour in the mental image of Chinese native speakers. The word ‘aeroplane’, with its sense of ‘heavier-than-air flying machine’, does not say anything about shape or color, but these are supplied from a
conventional mental image. The term *malingshu* 马铃薯 (horse-bell, yam/potato [potato]) involves the image of shape/size, mapped onto the image of shape-size of yam/potato. In the conventional metaphor, the potato looks like ‘horse-bell’ in shape and size; but the shape and size resemblance between the horse-bell and potato is based on the mental image.

Generally, metaphors belong in a category of conceptual metaphors (Lakoff, 1987, 1993; Lakoff & Johnson, 1980; Lakoff & Turner, 1989), which as a specific category takes in more concepts than other categories of metaphors such as orientation and image. Conceptual metaphors relate to the association between a source domain and target domain at the conceptual level (Evans & Green, 2006: 295). Domains—bodies of knowledge that organize relevant concepts—employ mapping as a link between the source and the target. For example, the term *maoyan* 猫眼 (cat, eye [peephole]) originates from the English word ‘peephole’, meaning ‘an aperture through which one may peep’. The Chinese word ‘cat’s eye’ as an entity with function of seeing is mapped onto the entity of means of seeing. The mapping of the source domain (peephole) and target domain (cat’s eye) can create a conceptual level association of peeping (with eyes). This association is based on a perceived shape of that entity ‘hole’, which resembles *maoyan* 猫眼 ‘cat’s eye’, reflecting the conceptual metaphor. Another term *xingqi* 星期 (star, period [week]) is produced figuratively by a conceptual association between the source domain (foreign meaning) and the target domain (Chinese meaning). The component *xing* 星 (star) in *xingqi* is a first element metaphor, made figuratively. The Chinese meaning ‘star period’ is
mapped onto the English word ‘week’, denoting ‘period of seven days’. In modern Chinese, the meaning *xingqi 星期* (star period) refers to the reunion in the heavens of the Herd Boy and the Weaving Girl (CLSHK, 2002: 287). The conceptual association is that knowledge about the period of seven days (the source domain) corresponds to knowledge about the meeting days of two stars (the target domain): the mapping results in an epistemic correspondence. The component *qi 期* (period) as the second part of the word *xingqi 星期* (star, period [week]) coincides with the original meaning ‘period’, so that there is a semantic translation rather than metaphorical production.

In the process of metaphorical production, most metaphors can be explained by the FICT semantic model, distinctive properties (the first element) and generic name (the second element). Metaphors adduced in this thesis consist of two kinds, full metaphors and partial metaphors. Full metaphors comprise metaphorical component + metaphorical component, as in the term *xilanhua 西兰花*, composed of orientational metaphor *xi 西* (west) and image metaphor *lanhua 兰花* (blue flower). Partial metaphors are (1) metaphorical component (the first element) + semantic translation (the second element), as in the term *yashemao 鸭舌帽*, (duck, tongue, cap [peaked cap]); (2) semantic translation (the first element) + metaphorical component (the second element), as in the term *jiaohuang 教皇* (religion/church, emperor [Pope]). Some metaphors may not be segmented in terms of the FICT model; it may be difficult to characterise their semantic structure because they have been created by in a particular metaphorical way, for instance the word *maoyan 猫眼* (cat, eye
[peephole]). In short, the metaphorical approach is inseparable from human physical experience, and human perceptual and cognitive experience is crucial in FICT word production. In addition, the semantic structure or FICT model reveals metaphorical and non-figurative elements in a term.

8. 4 Implications and directions

**Classification of alphabetism and words borrowed from Japanese:**

Original foreign alphabetism (initialism) and acronym, such as ‘cc’, ‘WTO’, ‘CT’, ‘DVD’ or ‘DOS’, ‘AIDS’, have occurred in Chinese in the last two decades, but do not fall under the category of Chinese borrowings in this study, because these ‘words’ have not been transplanted directly from foreign languages for long, and are not accepted by all native speakers in everyday life, but are used only in the special press and literature. Further, this kind of ‘word’ is changeable from time to time and might be adapted by different borrowing forms such as phonic or semantic loans in the nearly future. Anyway, this linguistic phenomenon is worth exploring because it is being increasingly imported into Chinese; this kind of ‘words’ seems to fit the category of ‘foreign graphic loans’ proposed by Tian Huigang (1993: 21). It may be observed that foreign alphabetism and acronym are reproduced at the phonetic level, while form and meaning remained as the original. This phenomenon could bear separate research at some time.

With respect to the words borrowed from the Japanese language, the issue of identification of loan words is discussed among Chinese language scholars from the
end of the 1950s. Some scholars like Wang Lida (1958), Liu Zhengtan et al. (1984) consider that there are ‘around 850 Japanese graphic loans’ (Masini, 1993: 148) in modern Chinese. Other linguists such as Zhang Yingde (1958), Zheng Dian (1958), Shi Youwei (2000) consider that there are no more 800-900 words borrowed from Japanese in modern Chinese. They claim that it is necessary to establish which side first formed the terms. When the disputed words have been identified by Chinese language scholars, they seem to fit the category of ‘foreign graphic loans’, because Chinese native speakers pronounce them in the Chinese way and not the Japanese way. Apart from this, ‘Japanese words’ consisting of Chinese characters are imported into China in a form, which Chinese native speakers can easily accept.

**Metonymical production:**

FICT metonymical production is distinguished by the relationship between figurative meaning and literal meaning (Cruse, 2006). A typical definition of metonymy is that A stands for B with which A is closely associated (Seto, 1999), a traditional definition in terms of contiguity or close or direct relationship between two entities. For cognitive semanticists metonymy shows many of the same features as metaphors. Metonymy and metaphor are both conceptual processes, and both are used to create new lexical resources in language (Saeed, 2003). Their distinction is that metaphors are viewed as a relation of resemblance or a mapping across conceptual domains. Metonymies establish a connection within a single domain. Like metaphors, metonymies are a way of creating new vocabulary.
As with metaphor, metonymy is considered by Lakoff and Johnson (1980) as conceptual mechanism central to human thought and language. Other scholars (Bacelona, 2002, Kövecses, 2002, Panther & Thornburg, 1999) agreed with Lakoff and Johnson’s formulation, and suggested that metonymy may be more fundamental to conceptual organization than metaphors.

There are several patterns of metonymy in FICT word production in linguistic history. According to Peirsman and Geeraerts (2006), some examples of FICT could be categorized as three types—spatial domain; actions, events and processes; assemblies and collections in terms of metonymical features such as salience, contiguity and single domain, which motivate all the metonymical patterns. Metonymy as applied to FICT word production however has not been exhaustively examined in this thesis. It could be the subject of further research.

The classification and method of word production have been the subject of this thesis. However the field of Chinese borrowings is vast. A classification of all loan word phenomena in modern Chinese might cover phonic loans, semantic loans, loan blends, graphic loans as well as foreign-inspired Chinese terms. Foreign-inspired Chinese terms are particularly instructive in relation to the psychology and history and Chinese borrowings. Yet apart from cognitive treatment, research methodologies may devise various other approaches to borrowings from foreign sources in China.
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Appendix

List of Foreign-Inspired Chinese Terms

1. Terms taken from An Etymological Glossary of Selected Modern Chinese Words:

<table>
<thead>
<tr>
<th>English</th>
<th>Chinese romanization</th>
<th>Chinese Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>acre</td>
<td>yingmu</td>
<td>英亩 (唔格, 埃加, 爱克耳)</td>
</tr>
<tr>
<td>aerated water</td>
<td>qishui</td>
<td>汽水 (荷兰水, 气水, 硕水)</td>
</tr>
<tr>
<td>airplane (aeroplane)</td>
<td>feiji</td>
<td>飞机 (飞行影, 影器版车)</td>
</tr>
<tr>
<td>alcohol</td>
<td>huojiu</td>
<td>火酒 (醇, 酒, 酒醇, 酒精, 乙醇)</td>
</tr>
<tr>
<td>alma mater</td>
<td>muxiao</td>
<td>母校</td>
</tr>
<tr>
<td>American ginseng</td>
<td>xiyangshen</td>
<td>西洋参 (洋参)</td>
</tr>
<tr>
<td>anthracite</td>
<td>wuyanmei</td>
<td>无烟煤 (白煤, 硬煤)</td>
</tr>
<tr>
<td>antiaircraft gun</td>
<td>gaoshepao</td>
<td>高射炮</td>
</tr>
<tr>
<td>asbestos</td>
<td>shimian</td>
<td>石棉</td>
</tr>
<tr>
<td>auction</td>
<td>paimai</td>
<td>拍卖 (叫货)</td>
</tr>
<tr>
<td>avocado</td>
<td>niuyouguo</td>
<td>牛油果 (鳄梨)</td>
</tr>
<tr>
<td>bachelor</td>
<td>xueshi</td>
<td>学士</td>
</tr>
<tr>
<td>badminton</td>
<td>yumaoqiu</td>
<td>羽毛球</td>
</tr>
<tr>
<td>ball-point pen</td>
<td>yuanzhubi</td>
<td>圆珠笔 (灵珠笔)</td>
</tr>
</tbody>
</table>

295
bank  
yinhang  
银行（银号，银局，银馆，钱局）

bank draft  
duihuannjuan  
兑换券

barometer  
fengyubiao  
风雨表（风雨针，察天筒，气压表）

baron  
nanjue  
男爵（麻伦，马伦司）

baronet  
zhunnanjue  
准男爵（从男爵，男爵，爵士）

beet roots (red beet)  
hongcaitou  
红菜头（红甜菜）

Bible  
shengjin  
圣经（圣书，圣文，教书，约书，洋经）

bicycle  
zixingche  
自行车（踏车，脚踏车，双轮车，双轮
踏车，双轮铁车，两轮自行车，自转
车）

biscuit  
binggan  
饼干

bishop  
zhujiao  
主教（俾斯玻，弥索斯，弥涉）

black amber  
meijing  
煤精（墨珀，炭胆）

blueprint  
shaitu  
晒图

boiler  
guolu  
锅炉

bonus  
jiangjin  
奖金

boycott  
dizhi  
抵制（杯葛）

Boxing Day  
jieliri  
节礼日（箱子日）

bread  
mianbao  
面包

bubonic plague  
heisibin  
黑死病（鼠疫）

butter  
huangyou  
黄油（黄奶油，牛软，牛酯，牛乳软）

cabbage  
baoxincnai  
包心菜（卷心菜，洋白菜，结球甘蓝）
<table>
<thead>
<tr>
<th>English</th>
<th>Chinese</th>
<th>Pinyin</th>
</tr>
</thead>
<tbody>
<tr>
<td>cabinet</td>
<td>内阁</td>
<td>Neige</td>
</tr>
<tr>
<td>cake</td>
<td>蛋糕 (鸡蛋糕)</td>
<td>Dangao</td>
</tr>
<tr>
<td>camera</td>
<td>照相机 (镜匣, 神镜, 手镜, 照相镜, 照相匣, 照像镜, 照像器, 照像机, 照影镜)</td>
<td>Zhaoxiangji</td>
</tr>
<tr>
<td>cannon</td>
<td>机关炮</td>
<td>Jiguanpao</td>
</tr>
<tr>
<td>caricature</td>
<td>漫画 (滑稽柴, 讽刺柴, 丑恶之柴)</td>
<td>Manhua</td>
</tr>
<tr>
<td>Catholicism</td>
<td>文主教 (公教, 洋教, 旧教, 罗马教, 罗马文主公教, 加特教, 加特力教, 加特力文主教, 文主加特力教)</td>
<td>Tianzhujiiao</td>
</tr>
<tr>
<td>cauliflower</td>
<td>花椰菜 (菜花, 花菜)</td>
<td>Huayecai</td>
</tr>
<tr>
<td>cell</td>
<td>细胞 (膛, 小凹, 细胞体)</td>
<td>Xibao</td>
</tr>
<tr>
<td>cement; concrete</td>
<td>水泥 (混凝土, 洋灰, 火泥, 赛门得, 赛门敦, 赛门敦石灰, 赛门德土, 赛门土, 崔门土, 西门土, 西门土, 水门汀, 四门町)</td>
<td>Shuini</td>
</tr>
<tr>
<td>chairman</td>
<td>主席</td>
<td>Zhuxi</td>
</tr>
<tr>
<td>chalk</td>
<td>粉笔</td>
<td>Fenbi</td>
</tr>
<tr>
<td>chemistry</td>
<td>化学</td>
<td>Huaxue</td>
</tr>
<tr>
<td>chess</td>
<td>国际象棋</td>
<td>Guoji xiangqi</td>
</tr>
<tr>
<td>China town</td>
<td>唐人街 (唐人城)</td>
<td>Tangrenjie</td>
</tr>
<tr>
<td>Christmas</td>
<td>圣诞 (神诞)</td>
<td>Shengdan</td>
</tr>
</tbody>
</table>

297
<table>
<thead>
<tr>
<th>English</th>
<th>Simplified</th>
<th>Traditional</th>
<th>Chinese (Pinyin)</th>
<th>Chinese (Mandarin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>church</td>
<td>shengtang</td>
<td>修堂</td>
<td>圣堂 (教堂, 殿堂, 瞻礼堂, 礼拜殿, 礼拜庙, 礼拜寺, 礼拜寺楼, 上帝之殿, 祆祠, 教馆, 庙宇, 克力士顿庙, 塔庙, 庙, 会堂)</td>
<td></td>
</tr>
<tr>
<td>cigarette</td>
<td>xiangyan</td>
<td>香烟</td>
<td>香烟 (纸烟, 纸卷烟, 烟卷)</td>
<td></td>
</tr>
<tr>
<td>circus</td>
<td>maxi</td>
<td>马戏</td>
<td>马戏 (驰马戏)</td>
<td></td>
</tr>
<tr>
<td>city; metropolis</td>
<td>dushi</td>
<td>都市</td>
<td></td>
<td></td>
</tr>
<tr>
<td>civil engineering</td>
<td>tumu gongcheng</td>
<td>土木工程</td>
<td></td>
<td></td>
</tr>
<tr>
<td>classroom</td>
<td>jiangtang</td>
<td>讲堂</td>
<td></td>
<td></td>
</tr>
<tr>
<td>close</td>
<td>bimu</td>
<td>闭幕</td>
<td></td>
<td></td>
</tr>
<tr>
<td>collarbone</td>
<td>suogu</td>
<td>颈骨</td>
<td>颈骨 (锁骨)</td>
<td></td>
</tr>
<tr>
<td>comprador</td>
<td>meiban</td>
<td>买办</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concave lens</td>
<td>pingaojing</td>
<td>平凹镜</td>
<td></td>
<td></td>
</tr>
<tr>
<td>condom</td>
<td>choutao</td>
<td>避孕套</td>
<td>避孕套 (皮套, 肾衣, 英国衣, 法国衣)</td>
<td></td>
</tr>
<tr>
<td>congress; parliament</td>
<td>guohui</td>
<td>国会 (国会院)</td>
<td>国会 (国会院)</td>
<td></td>
</tr>
<tr>
<td>consonant</td>
<td>fuyin</td>
<td>父音</td>
<td>父音 (辅音)</td>
<td></td>
</tr>
<tr>
<td>convex lens</td>
<td>pingtujing</td>
<td>平凸镜</td>
<td></td>
<td></td>
</tr>
<tr>
<td>copyright</td>
<td>banquan</td>
<td>版权</td>
<td>版权</td>
<td></td>
</tr>
<tr>
<td>cork</td>
<td>ruanmusai</td>
<td>软木塞</td>
<td>软木塞 (软木, 栓皮)</td>
<td></td>
</tr>
<tr>
<td>count</td>
<td>bojue</td>
<td>伯爵</td>
<td>伯爵 (耳弥司, 加稳斯)</td>
<td></td>
</tr>
<tr>
<td>crane; hoist</td>
<td>hejingcheng</td>
<td>鹤颈秤</td>
<td>鹤颈秤 (吊车, 起重机, 卷扬机, 起重</td>
<td></td>
</tr>
</tbody>
</table>

298
cricket  

cross

current

current

defendant

diesel oil

diploma

draft

dressing room

duke

electric lamp

empire

equator

Eskimo

Esperanto

explore

export

film

firebrick
<table>
<thead>
<tr>
<th>English</th>
<th>Chinese</th>
<th>Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>fire extinguisher</td>
<td>miehuoqi</td>
<td>（熄火机, 救火水炮, 制火宝机）</td>
</tr>
<tr>
<td>first mate</td>
<td>dafu</td>
<td>大副</td>
</tr>
<tr>
<td>flageolet</td>
<td>yindi</td>
<td>银笛</td>
</tr>
<tr>
<td>fly flag at half</td>
<td>xibanqi</td>
<td>下半旗</td>
</tr>
<tr>
<td>focus</td>
<td>jiaodian</td>
<td>焦点</td>
</tr>
<tr>
<td>foot</td>
<td>yingchi</td>
<td>英尺 (呎, 弧, 幅地)</td>
</tr>
<tr>
<td>fortification</td>
<td>gongshi</td>
<td>工事</td>
</tr>
<tr>
<td>fossil</td>
<td>huashi</td>
<td>化石</td>
</tr>
<tr>
<td>fountain pen</td>
<td>zilaishuibi</td>
<td>自来水笔</td>
</tr>
<tr>
<td>frosted glass;</td>
<td>maoboli</td>
<td>毛玻璃 (磨砂玻璃)</td>
</tr>
<tr>
<td>ground glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fuse</td>
<td>daohuixian</td>
<td>导火线 (药线)</td>
</tr>
<tr>
<td>galvanized iron</td>
<td>baitie</td>
<td>白铁</td>
</tr>
<tr>
<td>galvanized wire</td>
<td>qiansi</td>
<td>铅丝</td>
</tr>
<tr>
<td>gear</td>
<td>chilun</td>
<td>齿轮 (轮齿, 藤线器, 螺丝塔)</td>
</tr>
<tr>
<td>geology</td>
<td>dizhixue</td>
<td>地质学</td>
</tr>
<tr>
<td>gibbon</td>
<td>changbiyuan</td>
<td>长臂猿 (吉贡)</td>
</tr>
<tr>
<td>giraffe</td>
<td>changjinlu</td>
<td>长颈鹿 (豹驼, 兽马, 长颈怪马, 支列胡, 吉拉斐, 吉拉夫, 齐特, 即拉夫, 支而拉夫)</td>
</tr>
<tr>
<td>God</td>
<td>zaowuzhu</td>
<td>造物主 (上帝, 造化主, 天父, 天主,</td>
</tr>
<tr>
<td>English</td>
<td>Chinese</td>
<td>Pinyin</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>governor</td>
<td>zōngdu</td>
<td>总督</td>
</tr>
<tr>
<td>gramophone</td>
<td>liushengji</td>
<td>留声机 (像声器，留声器，留音机器)</td>
</tr>
<tr>
<td>Gregorian calendar</td>
<td>gōnglì</td>
<td>公历 (西历，格里高利历)</td>
</tr>
<tr>
<td>guillotine</td>
<td>duantoutai</td>
<td>断头台</td>
</tr>
<tr>
<td>guinea pig</td>
<td>tunshu</td>
<td>豚鼠 (天竺鼠，荷兰猪)</td>
</tr>
<tr>
<td>gymnasium</td>
<td>jianshenfang</td>
<td>健身房</td>
</tr>
<tr>
<td>gymnastics</td>
<td>ticao</td>
<td>体操</td>
</tr>
<tr>
<td>hairspring</td>
<td>yousi</td>
<td>游丝</td>
</tr>
<tr>
<td>harmonica</td>
<td>kōuqín</td>
<td>口琴 (哈莫尼加)</td>
</tr>
<tr>
<td>(mouth organ)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>headquarter</td>
<td>zōngbù</td>
<td>总部 (本部)</td>
</tr>
<tr>
<td>hero</td>
<td>zhurenweng</td>
<td>主人翁</td>
</tr>
<tr>
<td>high explosive shell</td>
<td>liudan</td>
<td>榴弹 (开花弹)</td>
</tr>
<tr>
<td>high seas</td>
<td>yuányáng</td>
<td>远洋</td>
</tr>
<tr>
<td>hint</td>
<td>ānshì</td>
<td>暗示</td>
</tr>
<tr>
<td>horizon</td>
<td>dìpingxiàn</td>
<td>地平线 (天际线)</td>
</tr>
<tr>
<td>hothouse</td>
<td>liulífang</td>
<td>琉璃房 (玻璃房，玻璃巨室，玻璃暖室，玻璃大花房，大玻璃房，温室，暖房)</td>
</tr>
<tr>
<td>hour hand</td>
<td>shízhēn</td>
<td>时针 (短针)</td>
</tr>
<tr>
<td>(of timepiece)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>Chinese (Pinyin)</td>
<td>Chinese (Transliteration)</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>House of Commons</td>
<td>dieryuan</td>
<td>第二院 (下议院, 下踏, 下代堂, 平民)</td>
</tr>
<tr>
<td>(Lower House; House of Representatives)</td>
<td></td>
<td>踏, 乡绅房, 乡绅之代, 众议院)</td>
</tr>
<tr>
<td>House of Lords</td>
<td>diyiyuan</td>
<td>第一院 (上议院, 贵族院, 上院, 上会堂, 爵房, 五爵之会, 大理匣, 左院, 律好司, 劳尔筹士)</td>
</tr>
<tr>
<td>(Upper House)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hyperbola</td>
<td>shuangquxian</td>
<td>双曲线</td>
</tr>
<tr>
<td>ice cream</td>
<td>xuegao</td>
<td>雪糕 (冰糕, 冰乳, 冰激凌, 冰积凌, 冰凌, 冰淇凌, 冰其凌, 冰其淋, 冰忌廉, 埃土忌廉)</td>
</tr>
<tr>
<td>import (enter port)</td>
<td>jinkou</td>
<td>进口</td>
</tr>
<tr>
<td>imports</td>
<td>bolaipin</td>
<td>舶来品</td>
</tr>
<tr>
<td>inch</td>
<td>yingcun</td>
<td>英寸 (因制)</td>
</tr>
<tr>
<td>ink</td>
<td>moshui</td>
<td>墨水</td>
</tr>
<tr>
<td>inspiration</td>
<td>linggan</td>
<td>灵感 (烟士披里纯)</td>
</tr>
<tr>
<td>international</td>
<td>wanguo</td>
<td>万国 (国际, 英特纳雄那尔)</td>
</tr>
<tr>
<td>iron wire</td>
<td>tiesi</td>
<td>铁丝</td>
</tr>
<tr>
<td>Japanese</td>
<td>dongyu</td>
<td>东语 (东文)</td>
</tr>
<tr>
<td>jinrikisha</td>
<td>dongyangche</td>
<td>东洋车 (东洋手车, 黄包车, 腕车, 人力车)</td>
</tr>
<tr>
<td>Judaism</td>
<td>tiaojinjiao</td>
<td>挑筋教 (犹太教, 由斯教, 由教)</td>
</tr>
<tr>
<td>kaleidoscope</td>
<td>wanhuatong</td>
<td>万花筒</td>
</tr>
</tbody>
</table>
kangaroo  daishu  袋鼠 (大袋鼠, 叶兽, 更格卢)
kerosene  huoyou  火油 (煤油, 灯油, 矿火油)
Krupp  hai’anpao  海岸炮 (克鲁伯炮)
lathe  chechuang  车床
lecturer  jiangshi  讲师
life buoy  jiushengquan  救生圈 (救命圈, 保险圈)
life jacket  jiushengyi  救生衣 (浮水衣, 气袄, 太平衣)
lift  shenjiangji  升降机 (电梯, 活梯, 活屋, 转机, 自行屋, 起落架)
lighthouse  dengta  灯塔
lightning rod  bileizhen  避雷针
linen  zhubu  竹布 (亚麻布)
lottery ticket  caipiao  彩票
machine gun  jiguangqiang  机关枪 (机枪)
magazine  zaizhi  杂志
magnifier  fangdajing  放大镜
mailman  toudiyuan  投递员 (信夫, 邮电传递员)
map  ditu  地图 (地景图)
marquis  houjue  侯爵
masked ball  jiamian wuhui  假面舞会 (假面会, 变妆跳舞会)
masturbate  shouyin  手淫
match  huochai  火柴 (自来投, 投寸, 磷寸, 煭木, 洋
<table>
<thead>
<tr>
<th>English</th>
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<td>mayor</td>
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<td>shenjingbing</td>
<td>神经病</td>
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<td>meirenyu</td>
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<td>meteorological observatory</td>
<td>qixiangtai</td>
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<tr>
<td>mile</td>
<td>yingli</td>
<td>英里</td>
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<td>changzhen</td>
<td>长针(分针)</td>
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<td>libaiyi</td>
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<td>qiting</td>
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<td>喉舌</td>
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<td>dianying</td>
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<td>music box</td>
<td>bayinhe</td>
<td>八音盒(八音匣, 八音琴)</td>
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<td>yangdin</td>
<td>洋钉(钉子, 铁钉)</td>
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<td>guanxianyue</td>
<td>管弦乐</td>
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<td>shuanggang</td>
<td>双杠 (平行杠)</td>
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<td>xiangqin</td>
<td>香芹 (香菜，帕司利)</td>
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<td>gangbi</td>
<td>钢笔</td>
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<td>penguin</td>
<td>qie</td>
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<td>xiangzao</td>
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<td>changpian</td>
<td>唱片 (留音片，留声机片)</td>
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<td>zhaopian</td>
<td>照片 (影画，影图，影像，镜写真)</td>
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<td>黑油</td>
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<td>总理</td>
<td>zongli</td>
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<td>presbyopic glasses</td>
<td>老花镜</td>
<td>laohuajing</td>
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<td>president</td>
<td>总裁</td>
<td>zongcai</td>
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<td>小学</td>
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<td>prism</td>
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<td>防毒面具</td>
<td>fangdu mianju</td>
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<td>Protestantism</td>
<td>西教</td>
<td>xijiao</td>
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publication  kanwu 刊物（刊行物）
publish    chuban 出版
pyramid    jinzita 金字塔（三角塔，三角石塔，大塔，
              塔，石台，尖形高台，石碣）
qualification  zige 资格
quintal     yingdan 英担（担达）
racecourse  saimachang 赛马场（跑马场，比马场，环马场，竞
              马场，赌马场，赛马场）
radio set  shouyinji 收音机
radius      banjin 半径
reporter, journalist  jizhe 记者（记事者，访事员，采访停）
result      chanwu 产物
rivet       maoding 帽钉（冒钉，铆钉）
running water  zilaishui 自来水
Saint Valentine’s Day    qinrenjie 情人节（情人节）
Santa Claus  shengdan laoren 圣诞老人（白须老人）
science;  like 理科
scientific subjects
screw;     anlun 暗轮（螺旋桨，螺翼，螺丝轮，票进螺
(screw) propeller 旋机）
<table>
<thead>
<tr>
<th>English</th>
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<th>Pinyin</th>
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<tr>
<td>screw</td>
<td>luosi</td>
<td>螺丝 (螺钉, 螺丝钉, 螺丝丁, 旋螺钉)</td>
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<td>secretary</td>
<td>mishu</td>
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<td>sea urchin</td>
<td>haiguo</td>
<td>海锅 (海胆)</td>
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<td>senator</td>
<td>canyiyuan</td>
<td>参议员 (西那多)</td>
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<td>shaper</td>
<td>niutou baochuang</td>
<td>牛头刨床</td>
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<td>shot</td>
<td>qianqiu</td>
<td>铅球 (铁球)</td>
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<td>skyscraper</td>
<td>motianlou</td>
<td>摩天楼 (摩天楼大)</td>
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<td>slide show</td>
<td>huandeng</td>
<td>幻灯 (影戏, 影戏画)</td>
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<td>slide projector</td>
<td>huandengji</td>
<td>幻灯机 (影戏灯)</td>
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<td>niudou</td>
<td>牛痘</td>
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<td>feizao</td>
<td>肥皂</td>
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<td>specimen</td>
<td>biaoben</td>
<td>标本</td>
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<td>spectacles</td>
<td>jinshijing</td>
<td>近视镜 (近视眼镜)</td>
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<td>for nearsighted person</td>
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<td>spiral power; spring</td>
<td>fatiao</td>
<td>发条</td>
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<td>haimian</td>
<td>海绵 (海棉, 海绒)</td>
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<td>staff (musical)</td>
<td>zhengpu</td>
<td>正谱 (五线谱)</td>
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<td>Stars and Stripes;</td>
<td>huaqi</td>
<td>花旗 (星条旗, 星旗)</td>
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<tr>
<td>star-spangled banner</td>
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<td></td>
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<tr>
<td>station</td>
<td>chezhan</td>
<td>车站 (车厂, 车栈, 停车场, 司胎基)</td>
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<tr>
<td>steam engine</td>
<td>huolunji</td>
<td>火轮机 (火蒸机, 火枪轮, 蒸汽机, 火...</td>
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<tr>
<td>English</td>
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<td>Notes</td>
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<td>--------------</td>
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<td>steamer</td>
<td>lunchuan</td>
<td>轮船（火蒸船，火枪舟，火轮船，火轮舟，火船，火舰，火轮海船，汽船）</td>
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<td>stencil pen</td>
<td>tiebi</td>
<td>铁笔</td>
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<td>stethoscope</td>
<td>tingzhenqi</td>
<td>听诊器（听声筒，问病简，闻症简）</td>
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<td>strawberry</td>
<td>dishen</td>
<td>地椹（草莓）</td>
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<td>suitcase;</td>
<td>shoutixiang</td>
<td>手提箱（手箱）</td>
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<td>Sunday</td>
<td>libairi</td>
<td>礼拜日</td>
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<td>surgery</td>
<td>waike</td>
<td>外科（外科学）</td>
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<tr>
<td>syringe</td>
<td>zhusheqi</td>
<td>注射器（水节，铜节）</td>
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<td>tailorbird</td>
<td>fengyeying</td>
<td>缝叶莺（裁刚鸟，长尾刚叶莺）</td>
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<tr>
<td>tap (water)</td>
<td>shuilongtou</td>
<td>水龙头（机头，龙口，龙嘴，龙头）</td>
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<tr>
<td>teaching aid</td>
<td>jiaoju</td>
<td>教具</td>
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<td>teaching</td>
<td>jiangyi</td>
<td>讲义</td>
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<td>materials</td>
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<td>telegraph;</td>
<td>dianji</td>
<td>电机（发电机，电动机）</td>
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<td>machinery</td>
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<tr>
<td>telegraph</td>
<td>dianbao</td>
<td>电报（电信，电音，电气信，电气线，电气线报，电气报，电气秘书，电气通信标，千里信）</td>
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<td>telephone</td>
<td>dianhua</td>
<td>电话（得力风，得利风，筹律风，爹厘风，太力风，电线传声器）</td>
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<td>telescope</td>
<td>wangyuanjing</td>
<td>望远镜（千里眼镜，千里镜，千里眼，千里眼）</td>
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</tbody>
</table>
thermometer \hspace{1cm} \textit{hanshubiao} \hspace{1cm} \text{千里远镜, 万里镜)

\text{thermometer} \hspace{1cm} \textit{hanshubiao} \hspace{1cm} \text{寒暑表 (寒暑针，寒暑表针，暑寒针，
}
\text{寒温仪，体温计)}

\text{tin} \hspace{1cm} \textit{guantou} \hspace{1cm} \text{罐头}

\text{tobacco} \hspace{1cm} \textit{yancao} \hspace{1cm} \text{烟草 (淡八 gratuite)}

\text{tomato} \hspace{1cm} \textit{fangji} \hspace{1cm} \text{番茄 (西红柿，茄)}

\text{torch (electric)} \hspace{1cm} \textit{diantong} \hspace{1cm} \text{电筒}

\text{torpedo} \hspace{1cm} \textit{yulei} \hspace{1cm} \text{鱼雷}

\text{train} \hspace{1cm} \textit{huoche} \hspace{1cm} \text{火车 (蒸车，火烟车，火蒸车，火轮
}
\text{车，轮车，汽轮车，汽车)}

\text{tramcar} \hspace{1cm} \textit{dianche} \hspace{1cm} \text{电车}

\text{tribunal; court of justice} \hspace{1cm} \textit{fayuan} \hspace{1cm} \text{法院 (察院，按察司署，判断司)}

court of justice

trombone \hspace{1cm} \textit{changhao} \hspace{1cm} \text{长号}

\text{Tropic of Cancer} \hspace{1cm} \textit{beihui guixian} \hspace{1cm} \text{北回归线 (夏至线，夏至际，夏至前,
}
\text{夏至圈，昼长圈)}

\text{Tropic of Capricorn} \hspace{1cm} \textit{nanhui guixian} \hspace{1cm} \text{南回归线 (冬至线，冬至际，冬至前,
}
\text{冬至圈，昼短圈)}

\text{Tuesday} \hspace{1cm} \textit{libai'er} \hspace{1cm} \text{礼拜二}

twist \hspace{1cm} \textit{xiewenbu} \hspace{1cm} \text{斜纹布}

type \hspace{1cm} \textit{qianzi} \hspace{1cm} \text{铅字}

typewrite \hspace{1cm} \textit{dazi} \hspace{1cm} \text{打字}
undergraduate course;  *benke*  本科
regular college course

university  *daxue*  大学 (书馆, 太学, 共学, 总学, 公学, 公学堂, 公学院, 阜业院, 文学院, 大学院, 大学馆, 大学公堂, 文学馆, 大公学院, 由尼物司梯, 大书院, 大书馆)

valve  *heye*  合页
viaduct  *hanqiao*  旱桥
Virgin Mary  *shengmu*  圣母 (天主母)
viscount  *zijue*  子爵
visiting card  *mingpian*  名片（名刺，名帖）
volleyball  *paiqiu*  排球
vowel  *yuanyin*  元音（母音）
wastepaper basket  *zizhilou*  字纸篓（弃纸存器）
water pump  *choushuiji*  抽水机（水泵, 水机, 激水机, 起水机器, 起水筒, 吸水筒, 吸水机, 吸水机器, 抽水器, 抽水机器）

week  *xinqi*  星期（来复周）
weight  *fama*  砝码（法马，法码）
(used on a balance)
Western medicine  *xiyi*  西医
<table>
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<tr>
<th>English</th>
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<th>Pinyin</th>
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<tr>
<td>Western style clothes</td>
<td>西服 (西装, 洋服)</td>
<td>xifu</td>
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<tr>
<td>wheel steamship</td>
<td>暗火轮船</td>
<td>anhuolunchuan</td>
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<tr>
<td>wind instrument</td>
<td>管乐器</td>
<td>guanyeqi</td>
</tr>
<tr>
<td>wire (steel)</td>
<td>钢丝</td>
<td>Gangsi</td>
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<tr>
<td>word</td>
<td>单词 (单字)</td>
<td>danci</td>
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<td>zebra</td>
<td>斑马 (斑驴，花马，花驴，花兽，花条马，福鹿，芝不拉)</td>
<td>banma</td>
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<td>zoological garden</td>
<td>动物园 (动物园, 生灵苑, 生灵院, 生灵圃, 生物园, 生物院, 牲灵院, 万生院, 万生园, 万牲园, 万种园, 万兽园, 兽园, 野兽园, 禽兽园, 禽兽圃, 蓄物园, 放生院, 养生院, 蓄兽场, 动物场, 动物院, 动物公园, 琐卧拉治戈加登)</td>
<td>dongwuyuan</td>
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<tr>
<td>$ (dollar);</td>
<td>弗 (美金, 美圆)</td>
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<tr>
<td>U.S. dollar</td>
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2. Terms collected from everyday life

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<thead>
<tr>
<th>English</th>
<th>Chinese romanization</th>
<th>Chinese Character</th>
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<tbody>
<tr>
<td>airplane; aeroplane</td>
<td>yinyan</td>
<td>银燕 (飞房, 风船, 铁鹰, 天上火车)</td>
</tr>
<tr>
<td>aerotrain</td>
<td>cifu</td>
<td>磁浮 (悬浮列车, 气垫列车)</td>
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<tr>
<td>alarm clock; desk clock</td>
<td>matibiao</td>
<td>马蹄表</td>
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<td>American born</td>
<td>xiangjiaoren</td>
<td>香蕉人</td>
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<td>American ginseng</td>
<td>huaqishen</td>
<td>花旗参</td>
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<tr>
<td>antenna; aerial</td>
<td>tianxian</td>
<td>天线</td>
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<td>bakelite</td>
<td>jiaomu</td>
<td>胶木 (电木)</td>
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<td>bathtub</td>
<td>yugang</td>
<td>浴缸 (浴盆)</td>
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<td>big mac (McDonald)</td>
<td>juwuba</td>
<td>巨无霸</td>
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<td>blow a kiss</td>
<td>feiwen</td>
<td>飞吻</td>
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<td>borschch (боршч)</td>
<td>hongcaitang</td>
<td>红菜汤 (博尔食汤)</td>
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<td>bowknot</td>
<td>hudiejie</td>
<td>蝴蝶结</td>
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<td>brain</td>
<td>danao</td>
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<td>西兰花</td>
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<td>tuituji</td>
<td>粪土机 (平路机)</td>
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<td>camera shutter</td>
<td>kuaimen</td>
<td>快门 ([光] 闸)</td>
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<td>cardboard</td>
<td>Zhiban</td>
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<td>carnival</td>
<td>狂欢节 (谢肉祭, 嘉年华会)</td>
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<td>拼车</td>
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<td>celery</td>
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<td>塑胶 (赛璐珞)</td>
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<td>chameleon</td>
<td>变色龙</td>
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<td>泡泡糖</td>
<td>paopaotang</td>
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<td>圣诞节 (基督弥撒)</td>
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<td>cigarette holder</td>
<td>烟嘴儿</td>
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<td>clippers; hair-clippers</td>
<td>票子 (理发推剪)</td>
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<td>cobra</td>
<td>眼镜蛇</td>
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<td>炼乳 (花奶)</td>
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<td>qinzi jianding</td>
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<td>(deoxyribonucleic acid)</td>
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<td>白大褂</td>
<td>baidagua</td>
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<td>wanshengjie</td>
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<td>hour</td>
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<td>renzao huangyou</td>
<td>人造黄油</td>
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<td>microphone</td>
<td>huatong</td>
<td>话筒 (麦克风, 传声器)</td>
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<td>chaoduanqun</td>
<td>超短裙 (迷你平)</td>
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<td>shouji</td>
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<td>Naizuir</td>
<td>奶嘴儿</td>
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<td>shuanghuangguan</td>
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<td>dayan</td>
<td>大烟 (福寿膏, 洋烟)</td>
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<td>lianwaku</td>
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<td>gouzaidui</td>
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<td>yashemao</td>
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<td>huashengjiang</td>
<td>花生酱</td>
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<td>maoyan</td>
<td>猫眼 (门镜)</td>
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<td>qingmeisu</td>
<td>青霉素 (盘尼西林)</td>
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<td>picnic</td>
<td>yecan</td>
<td>野餐</td>
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<td>pineapple</td>
<td>fengli</td>
<td>凤梨 (菠萝)</td>
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</table>
plywood

pop-top; pull-top; flip-top

price scissors

raisin bread

ingredient bread

revolver (左轮)

rings (sports)

robot

rugby

Russian doll (套娃)

scalpel (柳叶刀)

screwdriver (改锥)

shuttle (航天飞机)

sidewalk

snow peas

snuff

spring lock (撞锁)

striking clock; chime clock

sunglasses

supermarket

sweet pepper; *shizijiao* 柿子椒

bell pepper

switch (electric) *kaiguan* 开关（电门）

tampax *weisheng miantiao* 卫生棉条（丹碧丝）

tinplate *duxitie* 镀锡铁（洋铁、马口铁）

UFO *feidie* 飞碟（幽浮）

(unidentified flying object)

uneven bars *gaodigang* 高低杠

van *mianbaoche* 面包车

vanishing cream *xuehuagao* 雪花膏

vaulting horse (in sports) *muma* 木马（鞍马）

violin *xiaotiqin* 小提琴

wagon (railway) *chepi* 车皮

walkman *suishenting* 随身听

zinc plate; galvanized *baitiepi* 白铁皮（镀锌铁）

iron